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Evaluation of Change in Surface Enamel Microhardness in Patients Undergoing Fixed Orthodontic Appliance Therapy – A Randomized Control Trial

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Abstract

Aim:

This study aims at determining the amount of enamel decalcification in terms of microhardness.

Materials and Methods:

Twenty patients requiring treatment by extraction method for Class I malocclusion with bimaxillary protrusion were selected for the study. Twenty patients were randomly divided into control group and experimental group. In the control group ($n = 40$), extraction of permanent first premolars was done on day 1 of bonding to assess the Vickers hardness number (VHN) of enamel surface, and in the experimental group ($n = 40$), extraction of the contralateral premolars was done on the 28th day after bonding to assess the VHN of enamel surface. The values are tabulated and analyzed by SPSS software.

Results:

There is significant surface enamel dissolution of enamel crystals in the experimental group compared to the control group, and a statistically significant difference in VHN is evident between the control and experimental groups. The surface enamel dissolution (VHN) is not significant difference noted between mandibular and maxillary premolars of the control and experimental groups.

Conclusion:

The present study has demonstrated a higher level of surface enamel dissolution in the experimental group. There is a marked difference in the VHN between the control and experimental groups, which is statistically significant. The scanning electron microscopy study also confirms the presence of surface enamel demineralization following orthodontic bonding.

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REVIEW ARTICLE

Posts in Primary Teeth—Past to Present: A Review of Literature

Adeline G Martin¹, Prathima Gajula Shivashakarappa², Selvabalaji Arumugam³, Nandakumar Sundaramurthy⁴

ABSTRACT

Early childhood caries is indeed a devastating situation for both patients' parents and pediatric dentists. The primary goal in treating severe early childhood caries is to restore normal function such as maintenance of mesiodistal and vertical dimension, prevention of alteration of mastication, phonetics (due to premature loss), development of parafunctional habits, and prevention of psychological problems affecting the self-esteem of a child. The restoration of primary dentition with extensive carious lesions is a complex clinical challenge of several dimensions. The severity of this condition in maxillary anterior teeth has prompted the extraction of teeth due to inadequate esthetic treatment options. The only concern with the severely destructed primary incisors is a lack of crown structure, which fails to support and adhere to a composite crown. Clinicians have preferred many restorative modalities for esthetic rehabilitation of badly decayed anterior primary teeth with numerous root canal retentive post and core systems with appropriate techniques to preserve those teeth until they are replaced by permanent teeth. This review highlights the various posts, their indications, principles, ideal properties, and the current concepts on their use in pediatric dentistry.

Keywords: Dentin post, Glass fiber post, Metal post, Post, Primary teeth.

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INTRODUCTION

The most common chronic disease of childhood is dental caries. Early childhood caries is carious lesions in very young children that clinically show a characteristic pattern. Maxillary central incisors and maxillary lateral incisors are the teeth most commonly involved followed by maxillary and mandibular first primary molars in both maxilla and mandible.¹ It is a chronic, irreversible, multifactorial disease whose etiology is frequently associated with night-time feeding (breast or bottle-fed), poor oral hygiene habits, and the consumption of a more cariogenic diet.² According to the AAPD guidelines, due to the unique and rampant nature of ECC, immediate therapeutic intervention is necessary to prevent further destruction and subsequent health problems.³

Another significant factor that a pediatric dentist is concerned about is trauma. Parents typically visit the dentist when their children's teeth are severely broken and, too often, with root stumps left behind due to inadequate knowledge and lack of awareness on their part, making rehabilitation difficult.⁴

When sufficient tooth structure remains to be rehabilitated, it can be treated with conservative preparation and the application of a dentin bonding agent followed by preventive resin restoration. When there is sufficient tooth structure the carious coronal tooth structure can be restored with polycarbonate crowns, art glass crowns, anterior strip crowns, and veneered stainless steel crowns.⁵ Due to the lack of knowledge and awareness among parents, the majority of them consider treatment for their children only when their teeth are grossly broken and mere root stumps remain.

Primary anterior strip crowns were restrained to primary teeth with sufficient enamel, with the newly developed composite and dentinal bonding technique, although they cannot be used in grossly damaged primary anterior teeth with little or no enamel remaining after caries removal.⁶ But it remains a clinical challenge while restoring primary incisors with extensive carious lesions. For a long period, extraction was the most commonly used treatment for primary teeth with significant coronal destruction.⁷ These

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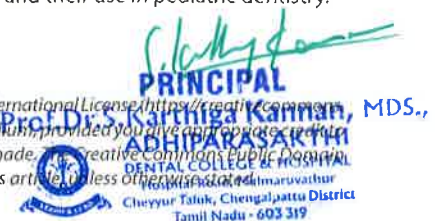
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teeth were quite often replaced by fixed or removable appliances, which pose issues with gingival health and patient cooperation. The restoration of grossly destruction maxillary incisors affected by early childhood caries has continued to be a major challenge for a pediatric dentist due to the insufficient amount of tooth structure available for bonding and behavioral problems in young children.⁸ In those larger lesions where little dental structure is left, conventional restorative procedures have been unsatisfactory and result in the use of prosthodontics appliances. In severely mutilated incisors where there is the involvement of pulpal tissue, pulpectomy has to be carried out and intracanal retention is necessary which allows building a post and core and then cementing an artificial crown. These posts were designed as composite resin posts, with the use of orthodontic pins, and as biological or natural posts.⁹

In clinical practice, evidence-based intracanal post-selection is very important, and pediatric dentists face significant problems due to the heterogeneity of data available on intracanal posts.

This literature review summarizes the various posts, their indications, ideal properties, and their use in pediatric dentistry.

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RESEARCH ARTICLE

Effects of Xylitol and CPP-ACP Chewing Gum on Salivary Properties of Children with Molar Incisor Hypomineralization

Gajula Shivashankarappa Prathima¹, Mudiarasu Narmatha², Arumugam Selvabalaji³, Sanguida Adimoulame⁴, Govindasamy Ezhumalai⁵

ABSTRACT

Aim: To compare the efficacy of chewing gum containing casein phosphopeptide-amorphous calcium phosphate (CPP-ACP) and xylitol on salivary characteristics in 8–10 years old children with molar incisor hypomineralization.

Materials and methods: A randomized controlled trial using CPP-ACP chewing gums (group I) and xylitol chewing gums (group II) was conducted among 32 children affected with mild molar incisor hypomineralization (MIH). Salivary flow rate, pH and buffering capacity were measured using saliva check kit (GC America). Data obtained were tabulated and subjected to statistical analysis using SPSS software version 20. Descriptive statistics—mean, standard deviation, 95% confidence interval. Inferential statistics—dependent t tests were used.

Results: A significant increase in mean salivary pH, flow rate and buffering action was observed from baseline to immediately after spitting the chewing gum in both the study groups ($p < 0.05$).

Conclusion: Casein phosphopeptide-amorphous calcium phosphate containing chewing gums improve salivary characteristics in MIH-affected children.

Clinical significance: Xylitol and CPP-ACP chewing gums are recommended in MIH children with early demarcated opacities as it improves the salivary properties in those children and prevents further complications.

Keywords: Casein phosphopeptide-amorphous calcium phosphate, Chewing gum, Molar-incisor hypomineralization, Remineralization, Saliva, Xylitol.

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INTRODUCTION

Dental caries is a multifactorial disease that involves complex interactions among acid-producing bacteria, fermentable carbohydrates, saliva, and teeth. Molar incisor hypomineralization (MIH), a qualitative type of enamel defect, have high concentration of carbon, which could be the cause of increased acid solubility and cause demineralization.¹ Saliva plays an important role in remineralization of the enamel. It has been reported that MIH-affected children have low salivary flow rates, moderately viscous type of saliva, and low pH.^{2,3} Thus, the typical teeth structure and saliva properties favor the enamel breakdown and caries progression.

In developing countries such as India, the parents do not give priority to their child's oral health until they complain of pain. Molar incisor hypomineralization lesions initially appear as white/yellow/brown demarcated opacities that fail to gain attention of the parents. Although the early lesion does not give any subjective symptoms, later the breakdown of the enamel will lead to sensitivity, caries, and sometimes loss of tooth. This problem can be overcome by treating the lesions earlier.⁴

Chewing gums increase the salivary properties by increasing the flow of stimulated saliva which has more buffer ions needed for tooth remineralization (Imfeld, 1999). In this study, we have used compared two types of chewing gum [casein phosphopeptide–amorphous calcium phosphate (CPP-ACP) and xylitol] on their efficacy in increasing the salivary properties such as saliva flow rate, pH, and buffering capacity in MIH-affected children.

MATERIALS AND METHODS

Study Design

Randomized controlled trial.

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Study Population

32 MIH-affected children who were selected from the previous prevalence study conducted among children aged 8 to 10 years from schools in Puducherry, India.

Sample Size Determination

From the literature,⁵ the mean value of salivary buffering capacity using CPP-ACP and xylitol-containing chewing gums substituted and sample size is calculated, $\mu_1 = 4.7377$, $\mu_2 = 4.65415$.


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Original Article

Evaluation of Change in Surface Enamel Microhardness in Patients Undergoing Fixed Orthodontic Appliance Therapy – A Randomized Control Trial

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ABSTRACT

Aim: This study aims at determining the amount of enamel decalcification in terms of microhardness. **Materials and Methods:** Twenty patients requiring treatment by extraction method for Class I malocclusion with bimaxillary protrusion were selected for the study. Twenty patients were randomly divided into control group and experimental group. In the control group ($n = 40$), extraction of permanent first premolars was done on day 1 of bonding to assess the Vickers hardness number (VHN) of enamel surface, and in the experimental group ($n = 40$), extraction of the contralateral premolars was done on the 28th day after bonding to assess the VHN of enamel surface. The values are tabulated and analyzed by SPSS software. **Results:** There is significant surface enamel dissolution of enamel crystals in the experimental group compared to the control group, and a statistically significant difference in VHN is evident between the control and experimental groups. The surface enamel dissolution (VHN) is not significant difference noted between mandibular and maxillary premolars of the control and experimental groups. **Conclusion:** The present study has demonstrated a higher level of surface enamel dissolution in the experimental group. There is a marked difference in the VHN between the control and experimental groups, which is statistically significant. The scanning electron microscopy study also confirms the presence of surface enamel demineralization following orthodontic bonding.

KEYWORDS: Decalcification, enamel microhardness, fixed orthodontic appliance, microhardness, white spot

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INTRODUCTION

The patient with fixed orthodontic appliance faces difficulties in maintaining proper oral hygiene. As a result, a lack of maintaining oral hygiene measures might lead to an increased risk of caries lesion. Enamel plays an essential role in protecting tooth structure against irreversible damages caused by acidic environment due to bacterial activity. The most common acidogenic bacteria are present in the plaque are *Streptococcus mutans* and lactobacilli. Dental caries often occurs due to the imbalance in the dynamic process of demineralization and remineralization of enamel. Subsequently, enamel can be re-established by adequate, stable minerals in the saliva or dental

plaque. The intensity of dental caries can range from the development of opaque white-spot lesions (WSLs), or decalcification, to loss of surface integrity of enamel and further leads to cavitation.

Regardless of advances in orthodontic material and treatment mechanics, the fixed orthodontic appliances are closely associated with a rapid shift in the bacterial flora of dental plaque. Gorelick *et al.* conducted a study

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Original Article



Comparative evaluation of compressive and flexural strength, fluoride release and bacterial adhesion of GIC modified with CPP-ACP, bioactive glass, chitosan and MDPB

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Abstract

Background. This study evaluated the incorporation of casein phosphopeptide-amorphous calcium phosphate (CPP-ACP), calcium sodium phosphosilicate bioactive glass (BAG), chitosan (CH), and methacryloyloxydodecylpyridinium bromide (MDPB) on the compressive and flexural strength, fluoride (F⁻) release, and bacterial adhesion of conventional glass-ionomer cement (C-GIC).

Methods. Modifications were implemented by adding CPP-ACP, BAG, and CH to the glass powder, while MDPB-GIC was prepared by incorporating MDPB to the liquid of C-GIC. Custom-made molds were used for specimen preparation. Compressive and flexural strengths were evaluated using a universal testing machine. F⁻ release was calculated with Erichrome cyanide reagent, using UV-spectrophotometry, at two time intervals of 24 hours and seven days. For bacterial adhesion, the test specimens were exposed to the bacterial suspension of *Streptococcus mutans* and *Lactobacillus acidophilus* for 4 hours, and the adherent bacteria were quantified using colorimetry as the optical density (OD).

Results. The incorporation of MDPB increased the flexural strength of C-GIC, with no effect on its compressive strength. CH significantly improved the compressive and flexural strength; modifications with CPP-ACP, BAG, and MDPB significantly improved the flexural strength of C-GIC. While MDPB-GIC released significantly higher F⁻ at 24 hours, CPP-ACP- and BAG-modified GICs were comparable to C-GIC on day 7. C-GIC exhibited the highest bacterial adhesion, and MDPB-GIC showed the least. The data were analyzed with one-way (ANOVA), and pairwise comparisons were made with Tukey HSD tests.

Conclusion. Hence, it can be concluded that the incorporation of CPP-ACP, BAG, and CH improved the mechanical properties of C-GIC, whereas MDPB improved the resistance of C-GIC to bacterial adhesion.

Introduction

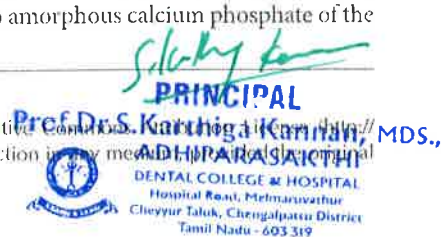
Recurrent caries has been the most frequent cause of failure of dental restorations. Fluoride-releasing restorative materials were introduced to overcome this disadvantage. Among the various commercially available fluoride-releasing materials, glass-ionomer cement (GIC) has the highest fluoride release. Resin-modified glass-ionomer cement (RMGIC), compomer, and alkasite, or ion-releasing composite have evolved over the years to harness the advantages of composite resins and GIC. However, the fluoride release of these newer materials is still less than GIC.¹ Certain inherent properties of GIC, such as anticariogenicity, biocompatibility, adhesion to enamel, dentin, and composite, and its low coefficient

of thermal expansion, which is similar to that of tooth structure, make it suitable for a wide variety of clinical applications. Despite these advantages, GIC has certain drawbacks, such as brittleness and porosity, which result in poor mechanical properties, such as low wear resistance and fracture toughness.²

The composition of GIC has been experimented with the incorporation of a wide variety of biologically active materials. Modifications of GIC with casein phosphopeptide-amorphous calcium phosphate nanocomplexes (CPP-ACP), calcium sodium phosphosilicate bioactive glass (BAG), and chitosan (CH) have been reported in the literature. The incorporation of CPP-ACP to GIC has shown that the localization of CPP to amorphous calcium phosphate of the

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COVID-19 Information

Public health information (CDC)

Research information (NIH)

SARS-CoV-2 data (NCBI)

Prevention and treatment information (HHS)

Español

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Comparative evaluation of body mass index among school children with and without Bruxism of age group of 6-12 years in Kanchipuram district: A cross-sectional study

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Abstract

Aim: To evaluate and compare the body mass index (BMI) of school-going children with bruxism and without bruxism of age between 6 and 12 years.

Settings and design: To find the correlation between BMI and oral habit bruxism among school children and compare with those children without bruxism.

Materials and methods: A total of 6122 children were screened from 28 government and 12 private schools, in which 1854 (30.28%) had various types of oral habits. Among this 280 children had the stressful habit bruxism. The BMI of those children was calculated by measuring the height and weight. The values were compared with the BMI of same number of students of same age group, who does not have any oral habits, with the WHO standard. The values were calculated and tabulated for the statistical analysis, using the SPSS software version 19 (IBM company) with the $P < 0.05$ as statistically significant.

Results: Its shows that children with bruxism has high BMI range, was in the order of overweight > Normal > Underweight, but the BMI of children without any habit was in the order of normal > Underweight > Overweight. On comparison, it was statistically significant.

Conclusion: The habit bruxism had a positive correlation with the BMI of children. The children are more stressed from both indoor and outdoor. Hence, kindly educate all the parents, teachers, and public to identify the cause for the habit, because each oral habit is strongly deep rooted with some emotional and/or psychological problem and to make the children stress free in future.

Keywords: Body mass index; bruxism; cortisol; oral habit; prevalence; school children; stress.

Related information

MedGen


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Antiviral Essential Oil Components Against SARS-CoV-2 in Pre-procedural Mouth Rinses for Dental Settings During COVID-19: A Computational Study

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COVID-19 mainly spreads through cough or sneeze droplets produced by an infected person. The viral particles are mostly present in the oral cavity. The risk of contracting COVID-19 is high in the dental profession due to the nature of procedures involved that produce aerosols. Along with other measures to limit the risk of infection, pre-procedural mouth rinses are beneficial in reducing the viral particles in the oral cavity. In this study, the antiviral efficacy of essential oil components has been determined specifically against SARS-CoV-2 by molecular docking and conceptual DFT approach. Based on the binding affinities of the components against the receptor binding domain of the S1 glycoprotein, cuminal, carvacrol, myrtanol, and pinocarveol were found to be highly active. The molecular descriptor values obtained through conceptual DFT also indicated the above-mentioned components to be active based on the correlation between the structure and the activity of the compounds. Therefore, pre-procedural mouth rinses with these components included may be specifically suitable for dental procedures during the COVID-19 period.

Keywords: COVID-19, SARS-CoV-2, pre-procedural mouth rinse, antiviral, dental, molecular docking, conceptual DFT

INTRODUCTION

The outbreak of corona virus disease 2019 (COVID-19) in Wuhan, China, has impacted the world in several ways (Lai et al., 2020). This disease, caused by severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has swiftly spread across 202 countries in the world due to its highly contagious nature (Peng et al., 2020b). As per the World Health Organization (WHO) report, there have been about 38 million confirmed cases of COVID-19, including one million deaths all over the world (as on October 16, 2020) (<https://covid19.who.int/>). And in India alone, there are seven million cases with about 100,000 deaths reported (as on October 12, 2020) (WHO Coronavirus Disease, 2020). Despite undertaking serious measures to contain the disease globally, it is still on the rise with no

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A Cross-sectional Study to Evaluate Nuclear Changes in Buccal Mucosa Following Panoramic Radiography

Kalaiselvi Santhosh¹, Sathick Manzoor², Anu Sushanth³, Sakthidaran Seralathan⁴, Vivekanandan Rajasekar⁵, Anoop Jacob⁶

ABSTRACT

Aim and objective: To evaluate the possible genotoxic effect of X-rays on buccal mucosa while exposing to dental panoramic radiography using micronucleus test.

Materials and methods: The study group comprised of 30 healthy subjects, 15 males and 15 females, aged between 24 years and 65 years. Samples were obtained from the exfoliated oral mucosa cells of buccal mucosa before and 12 days after exposing the patients to panoramic radiography.

Results: The study reported that there was no significant increase in the number of micronuclei cells present before and after panoramic radiography. Positive correlation existed between age with pre- and postexposure micronuclei.

Conclusion: Diagnostic dental panoramic radiograph does not induce micronuclei in the target buccal epithelium cells. A positive correlation between age and micronuclei frequency was established.

Clinical significance: Panoramic radiographs does not induce cytotoxicity but increase frequency may be vulnerable to genotoxic effects in buccal mucosal cells. Hence, dental radiographs should be prescribed only when necessary.

Keywords: Buccal epithelium cells, Micronucleus test, Panoramic radiography, Radiation hazard.

The Journal of Contemporary Dental Practice (2020): 10.5005/jp-journals-10024-2921

INTRODUCTION

Ionizing radiation has become one of the universal diagnostic and therapeutic tools. With its importance in diagnosis and treatment, ionizing radiation is very potent mutagen which is said to induce mutations of genes and aberrations in chromosome. Ionizing radiation can act directly on the DNA or can form reactive compounds. Thus, alteration or mutation in the DNA is said to be an important aspect in carcinogenesis.^{1,2}

Dentist prefers to request panoramic radiography of dental arches when evaluation of all the teeth is necessary, as it becomes a choice over several periapical radiograph. In order to detect the radiation effects of low-dose diagnostic radiographic exposures, sensitive analysis and specific approaches are needed.³

Chromosomal alterations in the human peripheral lymphocytes and in the exfoliated cells of oral mucosa are evaluated by cytogenetic analysis, and this is one of the most sensitive techniques for monitoring human radiation exposure. Various assays are available and are proposed as potential biomarkers, which include the assay to assess metaphase chromosomal aberrations, sister chromatid exchanges, and host cell reactivation. These methods are laborious and consume lot of time and require highly skilled professionals to accurately read and interpret the slides. All the above-mentioned factor have created the need and interest for using the micronucleus test to uncultured exfoliated cells.^{4,5}

One of the most reliable methods to study genetic damage in human is by evaluating the micronuclei in the lymphocytes or in exfoliated cells. Peripheral lymphocytes are inappropriate for evaluation following radiation exposure in the oral cavity. Hence, buccal epithelial cells provide an alternative source of tissue to monitor radiation effects following oral and maxillofacial radiography. In most oral radiographic procedures, the buccal mucosa is a primary target for radiation induced damage. Further,

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buccal mucosa is easily accessible, and exfoliative cytology is a relatively easy, rapid, and noninvasive procedure.

Micronuclei (MN) are extra-nuclear bodies that contain damaged chromosome fragments and/or whole chromosomes that were not incorporated into the nucleus after cell division. Therefore, the aim is to evaluate the possible genotoxic effect of X-rays on buccal mucosa during panoramic dental radiography using micronucleus test, and the objective is to compare and correlate DNA damage



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Comparative Evaluation of the Antioxidant Effects of Oregano on Bleached Enamel Using Energy-dispersive X-ray Spectroscopy Analysis: An *In Vitro* Study

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ABSTRACT

Aim and objective: The aim of this study was to evaluate the efficacy of novel antioxidant oregano against conventional antioxidants sodium ascorbate and green tea through comparison of the baseline weight percentage (wt%) of minerals prior to bleaching with values after bleaching protocols and antioxidant application by employing energy-dispersive X-ray spectroscopy analysis (EDAX).

Materials and methods: Thirty noncarious, freshly extracted human permanent maxillary incisors without any visible defects were selected as samples. They were divided into three groups ($n = 10$) based on the antioxidant treatment received as follows: group I—10% sodium ascorbate solution, group II—10% green tea solution, and group III—5% oregano solution. 35% hydrogen peroxide was employed for bleaching. The wt% of teeth was calculated at three time intervals. The initial wt% was calculated prior to the bleaching procedure. The second one was calculated after subjecting to bleaching protocols, and final one was calculated after antioxidant treatment using EDAX.

Results: There was a statistically significant decrease in the calcium/phosphorus ratio for the bleached samples in comparison with the sound enamel. There was a comparable and significant increase in the calcium/phosphorus ratio values after application of the antioxidant with insignificant difference among the antioxidants evaluated in the study.

Conclusion: Treatment with antioxidants helped in the reversal of mineral loss, which occurred due to the bleaching procedure while the efficacy of 10% oregano on reversal of the calcium and phosphorus ratio was found to be comparable to that of 10% sodium ascorbate and green tea.

Clinical significance: Application of antioxidants after bleaching reduced the time delay in performing the adhesive procedures without compromising their clinical efficacy.

Keywords: Antioxidants, Bleaching agents, Green tea, Oregano, Sodium ascorbate.

The Journal of Contemporary Dental Practice (2020); 10.5005/jp-journals-10024-2912

INTRODUCTION

Tooth discoloration can be broadly categorized as extrinsic and intrinsic discoloration. Intrinsic discoloration occurs predominantly during the developmental stages of tooth. It includes amelogenesis imperfecta, dentinogenesis imperfecta, and enamel hypoplasia.

Drug-induced discoloration occurs due to the consumption of drugs during the formative stages of enamel and dentin. The acquired stains occur due to variety of causes, which can be grouped as microbial, dietary, and lifestyle changes. It predominantly affects the enamel and dentin components of hard tissues. A chemical interaction occurs between the acquired enamel pellicle, carbohydrate component of diet, and chromogenic microbes to produce the discoloration.¹

The selection of bleaching as a treatment option depends upon the severity of discoloration. In mild to moderate cases, it is selected as a primary treatment option while in severe cases it is selected as a secondary option to veneers.²

In the esthetic era, the bleaching procedure becomes an essential treatment option rather than a sophisticated option. The outcome of bleaching must be free from complication. The success of dental bleaching relies predominantly on the cautious handling of chemicals such as hydrogen peroxide and carbamide peroxide. Hydrogen peroxide available in various concentrations exerts its action by two major mechanisms: (a) release of free radicals and (b) redox processes all leading to the disintegration of pigments.³

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Conflict of interest: None

Application of bleaching agents on micromorphology of enamel and dentin

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COVID-19 Information

Public health information (CDC)

Research information (NIH)

SARS-CoV-2 data (NCBI)

Prevention and treatment information (HHS)

Español

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Comparative Evaluation of Antifungal Activity of Octenidine: An *In Vitro* Confocal Laser StudyN Bharath Naga Reddy ¹, Dinesh Sridhar ², Arasappan Rajkumar ³, Sabari Murugesan ⁴,
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PMID: 33568613

Abstract

Aim: The aim of this study was to evaluate the antifungal efficacy of a novel endodontic irrigant octenidine against conventional irrigants sodium hypochlorite and EDTA on *Candida albicans* growth in the young and old population by calculating the number of colonies formed and by qualitative identification of dead/viable fungi by Confocal laser scanning microscopy (CLSM) method.

Materials and methods: The total number of samples used in the study was eighty samples after decoronation of the crown portion the middle third of root canal. Each group was subdivided into four subgroups with various irrigation protocols: (A) 17% EDTA + 5.25% NaOCl, (B) 100% Octenisept, (C) 17% EDTA + 5.25% NaOCl + 1% clotrimazole, and (D) phosphate buffer saline. After completion of irrigation ATCC samples (90028) of *C. albicans* were inoculated with 5 mL of peptone water each and incubated at 37°C for 72 hours to attain the turbidity corresponding to 0.5 McFarland standards CFU. Eight samples were analyzed for the formation of candidal colonies, and two samples for the assessment of viability of *Candida* by confocal laser scanning microscope in each subgroup.

Results: Comparison of antifungal efficacy of endodontic irrigants employed in the young and old populations revealed a significant reduction in the mean values of CFU and the mean values of percentage of non-viable microorganism by CLSM method. A positive relationship was revealed in the younger population which had a better antifungal efficacy than the older population in all the irrigant subgroups evaluated in the study.

Conclusion: All the endodontic irrigants employed in our study had a good antifungal efficacy against *Candida albicans*. Octenisept had a maximum antifungal efficacy, while phosphate saline showed the least efficacy in both age groups, which was quantitatively evaluated by CFU method, and the same was confirmed through qualitative evaluation by CLSM method.

Clinical significance: *Candida albicans* plays a major role in the establishment and pathogenesis of failed root canal treatment. Age-related changes alter the adhesion potential of dentin, in turn influence the outcome of endodontic therapy. Octenidine, a novel antifungal agent, can be substituted over the conventionally used EDTA and NaOCl with less adverse effects.

Keywords: Antifungal activity; *Candida albicans*; Confocal laser scanning microscope Endodontic irrigants..

Related information

PubChem Compound (MeSH Keyword)



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Comparative Evaluation of Antimicrobial Efficacy of Toothpastes Containing Probiotic and Neem as Primary Ingredient on Salivary *Streptococcus mutans* in Melmaruvathur Population: An *In Vivo* Study

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ABSTRACT

Aim:

This *in vivo* study was designed to compare the antimicrobial effect of toothpastes containing probiotics and neem on *Streptococcus mutans* in 18–30-year-old patients in Melmaruvathur population.

Materials and Methods:

The study consisted of 60 patients who were randomly divided into two groups of 30 each. Group I received probiotic-based toothpaste (PerioBiotic), whereas Group II received neem-based toothpaste (Babool) as a preventive measure protocols to control the incidence and prevalence of dental caries.

Study Design Protocols:

Participants were instructed to use the dentifrice selected for the study, two times a day for 60 days. Tests were performed on the saliva samples at the beginning of the study, 0 day, 15th day, 30th day, and 60th day following the use of toothpaste. The Statistical Package for the Social Science (SPSS-25) software version, and Chi-square and one-way analysis of variance were used for data analysis.

Results:

The toothpastes containing neem and probiotics as primary ingredients were efficient in reducing the number of bacterial count when comparing the baseline data with the 60 days data in both the groups as a therapeutic regimen. Intragroup values showed reduction in the number of bacterial count in both the



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Comparative Evaluation of Xerostomia among Diabetic and Nondiabetic Subjects Wearing Complete Denture

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ABSTRACT

Background:

Diabetes mellitus represents a group of metabolic diseases that are characterised by hyperglycaemia due to a total or relative lack of insulin secretion and insulin resistance or both. Diabetes mellitus patients present with a higher susceptibility to infections due to a deficiency in polymorphonuclear leukocytes, as a result of vascular alterations and neuropathies. An increased risk of infections has been observed in complete denture wearing subjects with xerostomia. The objective of this study was to compare diabetic and non-diabetic subjects wearing complete dentures regarding xerostomia of different age group.

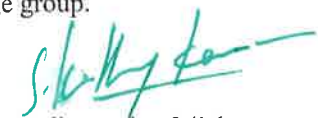
Materials and Methods:

A cross-sectional study was conducted among 50 subjects, 25 with and 25 without a diagnosis of diabetes, were matched for gender, race, and age.

Results:

In this study we intended to compare diabetic and non-diabetic subjects wearing complete dentures regarding xerostomia and we found that xerostomia was more associated with diabetic denture wearer group in comparison with the non-diabetic denture wearers with a significant *P* value of <0.05.

Conclusion:


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Awareness, Attitude, and Practice of Pediatricians Regarding Early Childhood Caries and Infant Oral Healthcare of Children in Puducherry- A Cross-Sectional Survey

Abstract

Context: Early Childhood Caries (ECC) is the most virulent form of caries, which requires early intervention. Pediatricians are health professionals who first examine the child, and must be able to educate parents about basic preventive dental care, early diagnosis of pathological changes in the oral cavity and appropriate referrals for the children. **Aims:** To assess the awareness, attitude, and practice among pediatricians regarding ECC and Infant Oral Healthcare (IOHC) in Puducherry. **Settings and Design:** Setting: Study was conducted among pediatricians of Puducherry. Design: Observational Cross-sectional study. **Methods and Material:** After obtaining consent from Pediatricians, a prevalidated questionnaire was distributed and collected from them regarding their awareness, attitude, and practices toward ECC and IOHC. **Statistical Analysis Used:** Percentage. **Results:** Out of 85% Pediatricians who responded, 57% of them were aware of initial white spot lesions, and 39% of them were aware of maternally-derived *Streptococcus mutans* disease. 100% of them were willing to avail information, training on IOHC. **Conclusions:** It is clear from the study that Pediatricians in Puducherry had limited awareness regarding the prevention of oral diseases. It is essential to provide sufficient knowledge to them by incorporating a module on ECC and infant oral health care in their curriculum.

Keywords: Early childhood caries, infant oral healthcare, pediatrician

Introduction

Early childhood caries (ECC) is the most virulent form of caries, which starts soon after tooth eruption. It develops on smooth surfaces and progresses rapidly, causing a detrimental impact on the dentition.^[1,2]

Infant oral health (IOH) is one of the foundations on which dental care and preventive education must be built to allow a lifetime opportunity free from preventable oral diseases.^[3-4] Pediatricians are the one who examine the infant soon after birth and several times during their routine health check-up. In all "well-baby check up" it is essential that the pediatricians educate mothers on oral hygiene and infant oral health practices.^[5] The American Academy of Pediatric Dentistry (AAPD) encourages health care providers to use all recommended preventive strategies to prevent ECC, and implementation of these strategies should begin at the Pediatrician's office.^[6] American Academy of Paediatrics (AAP) also emphasizes that

pediatric health care professionals should be trained to perform an oral health risk assessment on all children beginning at 6 months of age.^[7,8]

However due to lack of awareness pediatricians do not address the dental issue in the children nor refer them to a pedodontist.^[9] This leads to a lack of dental awareness among parents, and therefore, inability to provide comprehensive care for children that involves the coordination of services between medical and dental health care professionals.^[10,11]

According to the literature search, few studies have been conducted in Canada,^[2] Italy,^[10] Turkey,^[11] Virginia,^[12] Nigeria,^[13] Iran,^[14] and in different parts of India^[7,15-20] to assess the awareness, attitude, and practices of pediatricians and medical professionals regarding ECC and Infant Oral Health, but there are no studies conducted in Puducherry. Hence, this survey was planned to assess the awareness, attitude, and practices of pediatricians regarding ECC and IOHC.

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Estimation of TNF- α Levels in Saliva and Serum of Patients with Periodontal Health and Chronic Periodontitis: A Case-control Study

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ABSTRACT

Aim: The aim of this case-control study is to estimate the circulatory levels of tumor necrosis factor alpha (TNF- α) in saliva and serum of patients with chronic periodontitis and periodontally healthy subjects.

Materials and methods: Forty-four patients were screened, and based on biofilm-gingival interface (BGI) index, they were grouped into group I healthy periodontium [BGI-H (20)] and group II periodontitis [BGI-P3 (24)]. Venous blood and salivary samples were collected and analyzed using solid-phase enzyme-linked immunosorbent assay. Independent sample t test was performed to determine the association.

Results: Overall, there were differences in both the saliva and the serum TNF- α levels in healthy and periodontitis subjects. The average serum TNF- α concentration in group I healthy subjects was 23.12 pg/mL and in group II periodontitis was 24.06 pg/mL. In the saliva, the mean TNF- α level in group I healthy subjects was 45.69 pg/mL and in group II diseased subjects was 46.58 pg/mL. However, the values were not statistically significant ($p > 0.05$).

Conclusion: Circulatory and salivary TNF- α levels were found in detectable quantities. They showed a marginal increase in chronic periodontitis patients when compared with normal healthy patients in the absence of systemic diseases. Further studies are required in a large scale and with different methodologies to substantiate the role of TNF- α in the progression of periodontal diseases.

Clinical significance: Clinical significance of this study is to analyze the TNF- α levels in saliva and serum, which may be the aggravating factor in causing periodontal disease, thereby helping to treat periodontitis.

Keywords: Chronic periodontitis, Cytokines, Periodontal pockets, Saliva, Serum, Tumor necrosis factor- α .

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INTRODUCTION

Periodontitis is the major cause of tooth loss in adults after dental caries. The disease is characterized by progressive subgingival bacterial colonization resulting in inflammation, pocket formation, and bone loss. Although periodontal microorganisms are the major cause for periodontitis, the host immune response determines the susceptibility and the outcome of the disease.¹ As a result of this complex interaction between the periodontopathogens and host tissues, an array of inflammatory mediators such as interleukin-1 (IL-1), interleukin-6 (IL-6), interferon- γ , and tumor necrosis factor alpha (TNF- α) are released systemically.

These inflammatory mediators are released from infiltrating leukocytes, plasma cells, resident fibroblast, and other connective tissue cells. Tumor necrosis factor alpha, a potent inflammatory mediator, sets up an immune response via the activation of endothelial and gingival fibroblast cells. This leads to the upregulation of the adhesion molecules, matrix metalloproteinase (MMP), and prostaglandin end factor 2. As a result, osteoclastic cells are activated resulting in resorption of bone.² Tumor necrosis factor alpha also inhibits bone formation by the downregulation of osteocalcin gene transcription. The elevated levels of TNF- α lead to an exaggerated immune response causing attachment loss. This may be one of the mechanisms accounting for more severe periodontitis.³

In the light of the aforementioned facts, this study has been designed to estimate and compare the TNF- α levels in both saliva and serum of patients with chronic periodontitis and patients with a healthy periodontium.

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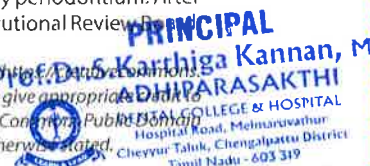
Source of support: Nil

Conflict of interest: None

The aim of this study was to compare the TNF- α levels in saliva and serum of patients with chronic periodontitis and patients with a healthy periodontium.

MATERIALS AND METHODS

This was designed as a double-blinded randomized analytical study to compare the TNF- α levels in saliva and serum of patients with chronic periodontitis and those with a healthy periodontium. After obtaining the ethical approval from the Institutional Review Board,



Management of recurrent mucocele with diode laser – Case report

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Abstract

Mucocele is a "benign mucus filled cavity which is usually present in the oral cavity, lacrimal sac, and paranasal sinuses." It is not a true cyst and it rarely resolves on its own, thus making surgical removal necessary in most cases. The need for surgical removal poses to be a challenge, especially in children and patients with behavioral problems. Various treatment options like - cryosurgery, micro-marsupialization, intra-lesion injection of corticosteroid, conventional surgical removal and laser ablation have been described in the literature. Few studies have demonstrated the use of LASER for removal of mucocele in adults. The present case describes a case wherein a Diode Laser was used for excision.

Introduction

Mucocele is a "benign mucus filled cavity which is usually present in the oral cavity, lacrimal sac, and paranasal sinuses."¹ The appearance of mucocele is a pathognomonic sign. The location of the lesion, any previous history of trauma, rapid appearance, size, and blue color of the lesion indicate a diagnosis of superficial mucocele.² Depending on the size and location, it may be associated with an external swelling, and also with interferences in mastication and speech discomfort. The lower lip is the most commonly affected site. The two types of mucoceles generally observed are extravasation and retention type, of which the extravasation type is commonly seen in children while the retention type is rare.^{3,4,5}

Shallow mucoceles burst and release straw coloured fluid, and deeper ones are known to last longer and cause discomfort. They are seen as bluish soft and transparent cystic swelling that most often resolve spontaneously. The color of the mucocele largely depends on the size of the lesion, their proximity to the surface and elasticity of the overlying tissue; making deeper mucoceles appear normal in color.^{6,7} But if untreated they get organized and more fibrous making surgical removal necessary, which can be challenging in children and patients with behavioral problems.⁸⁻¹⁰ Cryosurgery, intra-lesion injection of corticosteroid, micro-marsupialization, conventional surgical removal and laser ablation are some of the treatment options that have been used with success and are described in the literature.^{2,8,10-12, 14-16}

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Surgical excision of mucocele using a scalpel is the most commonly used method and it involves complete resection of the mucocele along with neighboring minor glands to reduce the risk of relapse.²¹ The use of laser comes with the advantage of being simple, less time consuming, bloodless procedure with minimal scarring and postoperative discomfort and less rate of recurrence.¹⁵⁻²⁰ Laser has been used effectively in pediatric patients as well as patients with behavioral problems.

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Original Article

Comparative evaluation of centrifuged liquid-based cytology method over conventional brush cytology in normal oral mucosa

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ABSTRACT

Introduction: Liquid-based cytology (LBC) is a new monolayer slide preparation method introduced to overcome the limitations of conventional Papanicolaou (PAP) smears which is used in cancer screening. The study was aimed to compare the efficacy of modified technique, centrifuged LBC (CLBC) with that of conventional brush cytology in normal oral mucosa. **Materials and Methods:** Two smears were obtained from 100 cases of normal mucosa using a cytobrush. One smear was spread on to the slide by conventional technique, and the other smear was prepared by CLBC. Regular PAP staining was done for both the smears. Both the smears were evaluated for cellularity, cell distribution, cellular overlapping, cell elongation, and cellular background and were graded using the grading criteria. Mann-Whitney U-test was used, and $P \leq 0.05$ was considered statistically significant. **Results:** The mean score of the criterias was found to be more desirable in CLBC than conventional technique, but there was no statistical significance found. **Conclusions:** LBC offers a significant advantage over conventional smear preparation in most of the criteria to advocate its use for routine diagnostic and mass screening procedures.

Key words: Brush cytology, liquid cytology, mucosa, oral, Papanicolaou

INTRODUCTION

Exfoliative cytology is an economical and the easiest procedure for the initial evaluation and diagnosis of oral

lesions.^[1] It is useful in community screening programs, wherein repeated samples might be required.^[2] Cytological smear is used in the early detection of premalignant or cancerous oral lesions and also lesions due to viral and fungal diseases.^[3,4]

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Liquid-based cytology (LBC) was commenced in the year 1990 and has exhibited remarkable advantages to conventional cytological method. Previous studies have shown that the LBC helps in preparation of quality smears, largely reduces the sampling errors, and also reduction in false-negative results.^[5,6] Red blood cells, inflammatory cells, and mucous are considerably reduced, and the cells are uniformly distributed randomly throughout the slide

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Original Article

Comparison of Reliability and Validity of Measurements on Digital Study Models Made with Scann Three-Dimensional Smartphone Software and Plaster Models: *In vitro* Study

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ABSTRACT

Aim: The aim of this study was to compare traditional manual model analysis with a digital caliper with the virtual model analysis of digitalized plaster models. **Settings and Study Design:** This was a comparative *in vitro* study. **Materials and Methods:** Randomly ten plaster models of prosthodontics patients in permanent dentition were analyzed. Manual analyses were performed with a diagnostic digital caliper and smartphone-assisted analysis after digitization of the plaster models using SCANN 3D software. The reliability and efficiency of digital models are to be analyzed by comparing measurements made on plaster and digital cast. **Statistical Analysis Used:** Difference and standard deviation were used for statistical analysis. **Results:** By comparing the linear transverse measurements, the data reveal that the mean values of the tooth width from the manual method were larger than the values from the digital method. The standard deviation was significantly high in the first premolar region, in manual method, and high in the second premolar region in digital measurements. With the digital method, the examiner found low values with the digital method. The time needed for the creation of 3D models from photogrammetry software will more and tedious and needs a learning curve. **Conclusion:** Models created by Scann 3D software with the help of a smartphone appear to be an adequate and reliable alternative to the conventional method of model analysis.

KEYWORDS: Linear transverse measurements, model analysis, photogrammetry, SCANN 3D, virtual

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CLINICAL RELEVANCE TO INTERDISCIPLINARY DENTISTRY

Digital models are used in all divisions of dentistry especially in prosthodontics and orthodontics in treatment planning and prosthesis fabrication.

INTRODUCTION

The plaster models have been an essential part of patient records for various dental treatments. They are a valuable tool for diagnosis and treatments, and it is widely used but often associated with some problems such as storage, breakage, and loss.

The manufacturing of dental models to be used for CAD/CAM systems in prosthetic dentistry has been used for some decades. Digital dental casts can be virtually analyzed with the advantage of clear landmarks at different magnifications and accurate cross-sectional images.

Clinicians seeking to overcome the shortcomings of conventional elastomeric impressions have implemented digital impressions as an adjunct or replacement for elastomeric impression materials. One advantage gained

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Review Article

Antimicrobial Effects of Platelet Rich Fibrin: A Systematic Review on Current Evidence of Research

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ABSTRACT

Background: Other than releasing a bunch of growth factors and molecules, platelet concentrates (PCs), especially platelet-rich fibrin (PRF) has a potential role in antimicrobial activities. **Aim:** The aim of this present systematic review was to collect, evaluate, and compare the available evidence regarding the antimicrobial efficacy of all types of PRF and to highlight the underlying mechanisms along with their potential benefits based on their actions, investigated by clinical and *in vitro* studies. **Materials and Methods:** Systematic approach was followed in the selection of studies. A detailed search was done in electronic databases such as PUBMED/MEDLINE, GOOGLE SCHOLAR, and SCIENCE DIRECT using specific search items with language restricted to English. All *in vitro* studies and clinical studies which assessed the antimicrobial activity of PRF alone or along with antibiotics or a type of PRF were included in the study. Other studies which included antimicrobial effects of other forms of PCs such as platelet-rich plasma (PRP), platelet gel, and animal studies were all excluded from the study. **Results:** After the initial and final screening of articles, only eight met the required criteria, of which seven were *in vitro* studies and one was a clinical study. All the studies evaluated the efficacy of one or more forms of PRF either against bacterial pathogens or showed inhibition of growth in culture. **Conclusion:** Based on the systematic review, PRF possesses antimicrobial efficacy against pathogens and the exact mechanism of the antimicrobial efficacy needs further investigation. The enhanced property of PRF against pathogens might be due to the release of platelets and preparation protocols such as lesser time and centrifugal speed. Further, PRF should be considered to be used as local drug delivery system which will be a potential treatment against periodontopathogens in the future.

KEYWORDS: Antimicrobial activity, I-platelet-rich fibrin, local drug delivery, platelet concentrates, platelet-rich fibrin

CLINICAL RELEVANCE TO INTERDISCIPLINARY DENTISTRY

PRF being used widely in all fields of dentistry, its mandatory to know the certain properties of PRF such as its antimicrobial activity so that its use can be widely researched

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INTRODUCTION

Over the years, platelet preparations have gained great popularity in various fields such as dentistry, sports medicine, dermatology, and even in plastic surgery. The reason for widespread usage of these preparations is mainly due to growth factors released and bioactive

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Knowledge, Attitude, and Challenges in Digital Learning Using Smartphones among Dental Students of South India: A Cross-Sectional Survey

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Abstract

Aim: Smartphones are a class of mobile phones with multipurpose facilities. They are being used for entertainment, shopping, and even educational purposes. Therefore, a study was planned to assess the knowledge, attitude, and challenges toward smartphone usage for digital learning among the dental students of South India. **Materials and Methods:** An observational cross-sectional web-based survey was conducted by using a structured, validated, 21-item questionnaire among dental students (final-year students, interns, and postgraduates) from seven random dental colleges in and around Chennai. The data about demographic status, the extent of smartphone utilization for knowledge, students' attitudes toward smartphone usage, and barriers in digital learning were collected. Chi-square test was applied. **Results:** In the present survey, 701 students have responded, predominantly females (80%). All participants owned a smartphone, and 62% of them had surfing time as more than 4h. Nearly 94% had used smartphones for social network surfing. Almost 99% participants viewed instructional videos and read scientific articles using their smartphone. The most common site accessed for knowledge seeking was Google Scholar (39%), followed by Wikipedia (34%) and PubMed (20%). Forty-five percent of postgraduates felt that smartphones enabled them to study independently. Small screen (56%) of smartphones and less knowledge about the available resources (42%) were the major reported barriers for digital learning through the smartphone. **Conclusion:** Dental students used their smartphones for educational purpose and showed a favorable attitude toward their use in dentistry. Smaller screens, nonavailability of wireless access, and less awareness about the reliability of available resources were reported as barriers.

Keywords: Attitude, Barriers, Dental Students, Digital Learning, Knowledge, Smartphones

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INTRODUCTION

Smartphones are a class of mobile phones with multipurpose mobile computing devices. They have broader software, internet, multimedia facilities, etc. The smartphones became popular in the early 2010s with faster wireless communication. And this has fostered the growth of smartphones worldwide by using a touch screen to allow the users to interact with them.^[1] According to the Telecom Regulatory Authority of India (TRAI), the country's overall number of mobile phone users

had risen to 1,16 billion in 2019 (TRAI April 2019).^[2] Various advantages of smartphones include instant communication, web surfing, camera, entertainment, education, and privacy.^[2]

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Effects of Trigonella Foenum Gel as an Adjunct to SRP on GCF Resistin in Periodontitis Subjects with Type 2 Diabetes Mellitus

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Abstract:

Aim: The aim of the study was to evaluate the effect of trigonella foenum gel as an adjunct to nonsurgical periodontal therapy on GCF levels of Resistin in Periodontitis patients with Type 2 Diabetes Mellitus.

Materials and methods: 120 Periodontitis patients with Diabetes Mellitus participated in this study and were randomly divided into two groups [Group 1: 60 periodontitis patients with Type 2 DM treated with SRP alone, Group 2: 60 periodontitis patients with Type 2 DM treated with SRP along with trigonella foenum gel]. Plaque Index, Gingival Index, Sulcus Bleeding Index, PPD, CAL, and FBS were recorded at the baseline and one month after treatment. GCF & blood samples were taken for analysis of Resistin and FBS respectively.

Results: Intragroup comparison for the clinical parameters showed statistically significant reduction in both the Groups ($p < 0.0001$). Intergroup comparison for clinical parameters showed statistical significance seen after 30 days except for Bleeding on Probing ($p = 0.1200$). Intragroup comparison of FBS ($p < 0.001$ and $p < 0.0006$) and GCF Resistin ($p < 0.0013$ and $p < 0.0021$) showed significance reduction in both the groups. On Intergroup comparison of FBS and GCF resistin, significant reduction was seen in Group 2 after one month ($p < 0.0020$ and $p < 0.0034$) respectively.

Conclusion: Trigonella foenum gel could be used as an adjunct to nonsurgical therapy in Periodontitis patients with Type 2 Diabetes Mellitus.

Keywords: Periodontitis, GCF Resistin, SRP, Trigonella Foenum gel, Type 2 Diabetes Mellitus.

Key findings of the study: Fenugreek causes significant improvement in clinical parameters due to its antioxidant and anti-inflammatory properties. There is significant reduction in GCF Resistin levels in Group 2 patients after application of fenugreek gel as an adjunct to SRP.

INTRODUCTION:

Periodontitis is a multifactorial disease of tooth supporting structures. Though initiation is dependent on the host response to microbial challenge, the progression of the disease is mainly by the local and systemic factors.^[1] Diabetes Mellitus has long been recognized as one of the pandemic cause of morbidity and mortality. There is an extensive literature suggesting a Two -Way relationship between Diabetes and Periodontitis, where, one disease affects the other as both are associated with exaggerated inflammatory response. Numerous mechanisms have been elucidated to explain the impact of Diabetes Mellitus on periodontium while inflammation is the primary linking factor for both the diseases. Periodontitis, being described as the sixth complication of Diabetes Mellitus has been directly correlated with the level of glycemic control.^[2]

Recently, the role of adipose tissue is linked to many endocrinal activity rather than fat production and storage. The adipokine from the adipose tissue are considered as adipocytokine that act as pro inflammatory cytokines. Many such adipokines have been discovered to be associated with systemic diseases. One such adipokine is Resistin, that derived its name from an original observation inducing insulin resistance in mice. Resistin was thought to be produced only by adipocytes, but studies have shown its origin from hypothalamus, pituitary, adrenal glands, pancreas, gastrointestinal tract, myocytes, spleen, plasma and immune cells like PMNs, monocytes and macrophages.^[3] Resistin is a member of a family of tissue-specific signaling molecules called as resistin-like molecules. Since the discovery of resistin in 2001 as a 'link' between obesity and Diabetes, researchers have increasingly focused on the pleiotropic role of



Management of Class II Hyperdivergent Mandible by Surgically Altering Occlusal Plane Pattern through Counterclockwise Rotation of Mandible

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ABSTRACT

Aim and objective: To evaluate the facial esthetic of class II hyperdivergent mandible by altering the high mandibular plane angle into an orthognathic mandibular plane angle by counterclockwise (CCW) rotation of the mandible.

Materials and methods: Five patients with class II hyperdivergent mandible were selected for this study. Initially, preorthodontics was done by aligning the teeth. Then, surgically, bilateral sagittal split osteotomy (BSSO) advancement with CCW rotation of mandible with a posterior open bite of 4 mm was done. Eleven linear and 11 angular measurements were taken. Pre- and postsurgical values were evaluated by composite cephalometric analysis, and the changes in the occlusal plane and facial height were statistically analyzed by using paired *t*-test. Jarabak ratio was calculated for facial height measurements. Further finishing will be done by postsurgical orthodontic procedures to get functional occlusion.

Results: Change in occlusion to class I is seen in values of Jarabak ratio and Go-Gn. Jarabak ratio shows an increase in posterior and decreases in anterior facial height. Go-Gn, which implies the CCW movement of the mandible, has reduced the anterior open bite and created a posterior open bite of 4 mm for the supraeruption of teeth.

Conclusion: BSSO with CCW rotation of mandible with a posterior open bite has conservatively involved in single-jaw surgery, thereby improving the facial esthetics of all the patients taken this study.

Clinical significance: This innovative method of CCW rotation of mandible with open bite mainly prevents the bi-jaw surgery, improves the stability, and gives an esthetically good appearance.

Keywords: BSSO, Class II hyperdivergent mandible, Counterclockwise rotation of mandible, Occlusal plane alteration.

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INTRODUCTION

Facial appearance is the key factor in interrelationships between human beings and their socio-psychological developments. Therefore, orthognathic surgery has been the objective of correcting skeletal discrepancies as well as altering facial balance, to achieve the esthetic results in patients who have severe disharmony of the jaws.¹ The general surgical line of treatment for class II malocclusion with hyperdivergent mandible was surgical vertical maxillary impaction and mandibular advancement with genioplasty [bi-jaw surgery combining Le Fort I osteotomy to bring about the maxillary impaction and rotational bilateral sagittal split osteotomy (BSSO) for mandibular advancement combined with/without sliding genioplasty] for further profile enhancement.² Another approach was through Le Fort I osteotomy and augmentation genioplasty.³

As discussed by Bruce N Epker in 1993, there is a misconception developed that the counterclockwise (CCW) rotation of the occlusal plane is an unstable procedure; further, he stated that one should randomly alter the occlusal plane angle based on their clinical impression to emphasize that this is the simplest method of correcting the existing functional and esthetic relationship of class II malocclusion with hyperdivergent mandible.⁴

The case selection for class II hyperdivergent mandible was mainly done, based on the lateral cephalometric analysis of upper and lower gonial angle, ramus length, occlusal, and mandibular plane angle of each patient, who were within our parameters. This common deformity encountered by the maxillofacial surgeons

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Novel Management of Hypersensitive Dentin Using Propolis-based Herbal Desensitizing Agents: An *In Vitro* Scanning Electron Microscopic Study

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ABSTRACT

Aim: The objective of this *in vitro* study was to assess the efficacy of novel propolis-based varnish against the two conventional varnishes on quantitative and qualitative assessments of occlusion of dentin tubules and resistance to erosive and abrasive wears employing scanning electron microscope (SEM).

Methods: Thirty human premolars free from caries extracted due to orthodontic reasons were included in the study. Experimental group was done based on treatment received and divided into three groups. Group A: ClinProXT Varnish ($n = 10$), Group B: MI Varnish ($n = 10$), and Group C: Propolis Varnish ($n = 10$) were applied. Teeth were cleaned and decoronation of crown was done with dentin disks. Dentin specimens of dimension $4 \times 4 \times 2$ mm were prepared and subjected to finishing and polishing. The sample specimens were submerged in EDTA solution for a period of five minutes to open up the dentinal tubules. This was followed by treatment with varnishes and subjected to acidic-abrasive challenge. The specimens were analyzed with an image analyzer connected to SEM for the verification of the number of opened dentin tubules. The parameter assessed in SEM includes size, topography and surface characteristics of dentinal tubule were assessed. The obliteration potential of dentinal tubules was assessed with SEM images. Additionally, the dentin surface loss and resistance to acidic and abrasive wear were also evaluated with SEM. Data were analyzed with two-way analysis of variance (ANOVA) with post hoc Tukey's test.

Results: MI Varnish caused higher obliteration of dentin tubules followed by ClinProXT Varnish. Propolis Varnish showed the least obliteration of dentinal tubules among tested experimental groups. After acidic-abrasive challenge, Propolis Varnish was found to be more efficient with less material loss among the experimental groups tested. There was an insignificant difference among the MI Varnish and ClinProXT Varnish groups.

Conclusion: Simulation of hypersensitive lesions mimicking the clinical scenario was a challenging task in this *in vitro* study. All varnishes tested in the study had good efficacy in the management of dentin hypersensitivity (DH). Propolis-based varnish had good resistance to material loss after subjected to acidic-abrasive challenge among the tested materials. The casein phosphopeptide (CPP)-amorphous calcium phosphate (ACP)-based MI Varnish had good efficacy to obliterate the dentinal tubules among the tested materials. It was prudent to select the varnishes with good long-term efficacy to survive in the clinical scenario which still remains a challenging task for the clinicians.

Clinical significance: The stability of the varnish plays a vital role in maintenance of its long-term efficacy. The chemical nature along with the ability of the material to interact with the substrate plays a major role in management of DH.

Keywords: Casein phosphate, Dental varnish, Dentine tubules, Propolis, Scanning electron microscope, Tricalcium phosphate.

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INTRODUCTION

Dentin hypersensitivity is defined as a painful response of the exposed dentin to various stimuli such as thermal, evaporative, tactile, osmotic, and chemical stimuli. It is a recurrent condition associated with discomfort and pain and defers the patient from maintaining adequate oral hygiene. Breach in protection offered by enamel or cemental layer or in combination with the following triggering factors such as acidogenic diets, destructive habits, improper toothbrushing techniques, and noncarious lesions plays a major role in pathogenesis of hypersensitive lesions.¹

Dentin hypersensitivity occurs in a phasic manner and begins with lesion localization and initiation that was best explained by hydrodynamic theory proposed by Brannstrom. It was evidenced by him that the maneuver that causes a reduction in a fluid flow toward the dentinal tubules had higher efficacy in the management of hypersensitive lesions.²

The material-related factors that play a vital role in the management of dentin hypersensitivity (DH) include the type of material, composition, reaction potential to the substrate, contact

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Effect of piper extract mouthwash as postprocedural rinse on levels of *Porphyromonas gingivalis* in periodontitis patients

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Abstract

Background:

Dental biofilm plays a crucial role in periodontal disease development. Mouth rinse is used to enhance oral hygiene after scaling and root planning (SRP). The aim of the study was to evaluate the clinical and microbiological effectiveness of a piper extract mouthwash against Chlorhexidine (CHX) in periodontitis patients.


Materials and Methods:

Sixty patients with Stage II periodontitis participated in this study and were randomly divided into two groups (Group I – Stage II Grade A periodontitis patients were provided with prepared piper extract mouthwash and Group II – Stage II Grade A periodontitis patients were provided with 0.2% CHX). Plaque index, gingival index, sulcus bleeding index, probing pocket depth, and clinical attachment level were recorded at baseline and 30 days after SRP. Subgingival plaque samples were taken for microbial examination (colony-forming unit), quantification of *Porphyromonas gingivalis* using the real-time polymerase chain reaction at baseline, and 30 days after SRP.

Results:

Intragroup comparison for the clinical parameters showed statistically significant reduction in both the groups ($P < 0.0001$). Intergroup comparison for clinical parameters, there was no statistical significance seen after 30 days. Intragroup comparison for microbial analysis showed significant reduction in both the groups after 30 days ($P < 0.0001$). On intergroup comparison for microbial analysis, both the groups showed reduction after 30 days without significance.

Conclusion:


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Mucoepidermoid Carcinoma of Sublingual Salivary Gland: A Rare Case Report

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Abstract

Rationale: Sublingual salivary gland tumours are very rare but are mostly malignant. As very limited literature is available, we present a rare case of mucoepidermoid carcinoma (MEC) of sublingual salivary gland. **Patient Concerns:** A 56-year-old female presented with an asymptomatic swelling of 15-year duration in the floor of the mouth and chin region. **Diagnosis:** Mandibular occlusal view, computed tomography scan, and ultrasonogram revealed calcification and the tumour to be of salivary origin. **Incisional biopsy** showed clear cell changes. **Treatment:** The sublingual and submandibular salivary gland along with the associated nodes was excised through transoral approach with midline osteotomy. **Outcomes:** The histopathologic diagnosis of excised specimen was "Intermediate grade MEC" with clear cell changes, stromal hyalinization, and local invasion. The patient was followed up for 12 months, and there was no evidence of any recurrence. **Takeaway Lessons:** Sublingual salivary gland malignancies show early invasion and a higher rate of metastases, thus requiring a vigilant intervention.

Keywords: Clear cells, mucoepidermoid carcinoma, sublingual salivary gland, ultrasonogram

INTRODUCTION

Sublingual salivary gland tumours are very rare (<1% incidence) and 80%–90% are malignant. Their clinical presentation varies from slow-growing indolent painless mass to painful locally aggressive and metastatic lesion. They pose a diagnostic challenge as there is considerable overlap among their various histologic subtypes mandating more researches at molecular level. Their unfavorable anatomic location offers the privilege for an early invasion and metastasis adding to the ordeal in their management.^[1] Due to lesser incidence, limited literature is available; hence, we present a case of long-standing asymptomatic swelling of sublingual salivary gland that was nonetheless mucoepidermoid carcinoma (MEC).

PATIENT CONCERNS

A 56-year-old female presented with an asymptomatic swelling of 15-year duration in the floor of the mouth and chin region that gradually increased in size.

Clinical findings

Extraoral examination revealed a soft-to-firm nontender swelling in the left submental and submandibular

region [Figure 1]. Left submandibular lymph node was of size 1 cm and nontender on palpation.

On intraoral examination, a localized, smooth, well-defined, nontender swelling approximately of size 4 cm × 2 cm in the floor of the mouth extending from 31 to 38 region was noticed [Figure 2]. Bi-digital palpation of the salivary gland revealed a blood-filled exudate through the ductal opening.

Diagnostic aids

Mandibular occlusal radiograph and computed tomography scan showed flecks of calcifications medial to the left mandibular cortex [Figure 3] that suggested "chronic sialadenitis secondary to sialolith." As tumours from floor of the mouth could also obstruct submandibular duct and cause

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Article

Allicin May Promote Reversal of T-Cell Dysfunction in Periodontitis via the PD-1 Pathway

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Abstract: We evaluated the role of allicin in periodontitis using an in silico and in vitro design. An in silico docking analysis was performed to assess the plausible interactions between allicin and PD-L1. The cytokine profile of gingival crevicular fluid (GCF) samples obtained from periodontitis patients was estimated by cytometric bead array. CD3+ lymphocytes isolated from the peripheral blood were sorted and characterized using immunomagnetic techniques. Cultured and expanded lymphocytes were treated with the GCF samples to induce T-cell exhaustion. Optimum concentrations of allicin were added to exhausted lymphocytes to compare the expression of TIM-3 and LAG-3 gene expression at baseline and post-treatment. Allicin was found to bind to the PD-L1 molecule as revealed by the in-silico experiment, which is possibly an inhibitory interaction although not proven. GCF from periodontitis patients had significantly higher concentrations of TNF- α , CCL2, IL-6, IFN- γ , and CXCL8 than controls. GCF treatment of CD3+ lymphocytes from the periodontitis patients significantly increased expression of T-cell exhaustion markers TIM-3 and LAG-3. Allicin administration with GCF treatment resulted in significant lowering of the expression of exhaustion markers. Allicin may exert an immunostimulatory role and reverse immune-destructive mechanisms such as T-cell exhaustion.

Keywords: allicin; gingival crevicular fluid; periodontitis; T lymphocytes



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Comparative evaluation of the degree of conversion of four different composites polymerized using ultrafast photopolymerization technique: An *in vitro* study

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Abstract

Context:

Lower degree of conversion (DC%) of monomer to polymer in a resin composite restoration could be a health hazard for the patient as well as it could affect the longevity of the restoration.

Aims:

This study is aimed to compare and evaluate the DC% of four different composites polymerized using ultrafast photopolymerization.

Settings and Design:

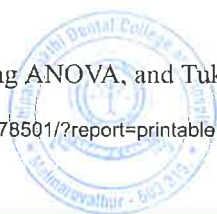
In-vitro study.

Materials and Methods:

A total of 40 disc-shaped composite samples were used in the study. Twenty samples were prepared in each group using 2 mm height and 6 mm diameter Tygon tube as a matrix. All of the samples were cured using the Woodpecker i Led light-curing unit with an intensity of 2300–2500 mW/cm² (TURBO mode). Samples in Group 1 were cured for 1 s and samples in Group 2 were cured for 4 s. Each group had 4 subgroups of five samples of the 4 resin composites tested. After photo-activation, the specimens were stored under dark dry conditions at room temperature for 24 h before testing. The DC% was measured using Fourier-transform infrared spectroscopy.

Statistical Analysis Used:

The DC% were analyzed using ANOVA, and Tukey HSD *post hoc* test using IBM SPSS 21 software.



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Stature Estimation of an Individual Using Nasal, Facial, and Palatal Height among Tamil Nadu Population

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Abstract

Background:

Stature estimation in human identification has a significant forensic importance. The stature correlates positively with bones or human body parts. Measurements of various body parts such as the arm, leg, feet, and finger can be used to estimate stature. This study is done to correlate the stature of person with facial, nasal, and palatal height among Tamil Nadu population.

Aim and Objective:

The aim and objective was to determine an individual's stature using facial, nasal, and palatal height and to find out the most reliable parameter to determine the stature of the person.

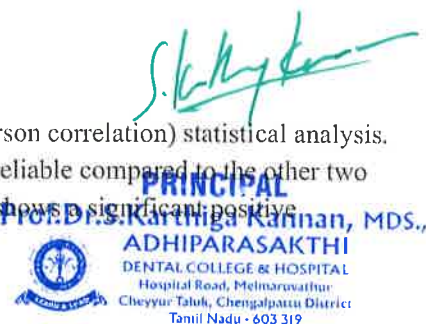
Materials and Methods:

Anthropometer, Vernier caliper, and palatometer were used for the analysis. The initial pilot study included 20 individuals. The representative study included 100 individuals of age 21–25 years. (Group 1 – males, Group 2 – females). Values of the three parameters (nasal, facial, and palatal) are calculated and related to that of the person's stature.

Results:

The quantitative data collected from the subjects are studied using (Pearson correlation) statistical analysis. The quantitative data availed from nasal height were found to be more reliable compared to the other two data in stature prediction. Correlation between stature and nasal height shows a significant positive correlation among the female group (2) with (P-value = 0.57).

Conclusion:





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Oral Health Status and Treatment Needs of Psychiatric Outpatients Aged 18-64 Years in District Civil Hospital, Raichur, Karnataka: A Cross-Sectional Study

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Abstract

Background:

Psychiatric patients or mentally ill patients conform a substantial section of the community deserving special attention. This study aimed to assess the oral health status and treatment needs of psychiatric patients attending District Civil Hospital, Raichur, Karnataka.

Materials and Methods:

The study group comprised 150 outpatients aged 18–64 years, attending the Department of Psychiatry, District Civil Hospital, Raichur. A specific questionnaire was drawn up and was used to record the demographic and medical data and oral hygiene practices. Type III clinical examination was performed. The WHO Assessment Form 1997 was used to assess the oral health status of the study population.

Results:

Of the 150 patients examined, 90 (60%) were male and 60 (40%) were female. The mean age of the patients was 33.79 ± 10.57 years. The majority (52%) were diagnosed with epilepsy and 18% had anxiety disorder. The prevalence of caries was 87.3%. Periodontal status, according to the Community Periodontal

A handwritten signature in blue ink, appearing to read 'S. Karthiga Kannan'.

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Assessment of Clinical and Radiographic Success Rate of Formocresol-based Pulpotomy versus Collagen-based Pulpotomy: An *In Vivo* Study

Vasanthakumari Anandan¹, Jaiganesh Inbanathan², Parthiban Saket³, Vivek Krishnamoorthy⁴, Shanmugavadivel Gandhi⁵, Vignesh Krishnapillai Chandrababu⁶

ABSTRACT

Aim: The aim of the study is (a) To use collagen as a pulpotomy material in comparison with the gold standard formocresol-based pulpotomy, (b) to assess the clinical and radiographic success rate of formocresol pulpotomy and collagen-based pulpotomy, and (c) to compare the success rate of formocresol-based pulpotomy and collagen-based pulpotomy over a definitive interval of time.

Materials and methods: Totally 30 primary first or second molars indicated for pulpotomy after confirming with the operative diagnosis were taken as samples for this study. This split-mouth technique consists of two groups: Group 1—formocresol pulpotomy ($n = 15$), and group 2—collagen-based pulpotomy ($n = 15$). Both the procedures were done in the same patient on regular appointments. Pre- and postoperative radiographs were taken. The children were recalled for clinical and radiographic follow-up at 2, 4, and 6 months. The success of the procedure was assessed based on clinical signs (pain, tenderness to percussion, abscess, swelling, fistula, and pathologic mobility) and radiographic findings (radicular radiolucency, internal and external root resorption, periodontal ligament (PDL) space widening, and furcation radiolucency). The Chi-square test was used to compare the differences between the groups.

Result: The overall success rate for formocresol pulpotomy ($n = 15$) was 14, 13, and 10 for the second-, fourth-, and sixth-month review period, respectively. For collagen pulpotomy group ($n = 15$), the overall success rate was 14, 14, and 14 for the second-, fourth-, and sixth-month review period, respectively. The obtained data from the overall success rate were subjected to statistical analysis, and chi-square test was used. The p -value less than 0.1 was considered a statistically significant result. The chi-square value for the fourth- and sixth-month review was 0.37 and 3.33, respectively.

Conclusion: Statistically significant value was obtained from the sixth-month review period ($p < 0.1$), which describes that the overall success rate was better for the collagen pulpotomy group when compared with the formocresol pulpotomy group.

Clinical significance: Collagen had proven to be a very good alternative for formocresol, its biocompatibility, and regenerative efficiency and is a benchmark for a better clinical success rate in dentistry. However, its implication in pulpotomy should be subjected to further comparative research study on mineral trioxide aggregate (MTA), Biodentine, etc.

Keywords: Collagen-based pulpotomy, Formocresol-based pulpotomy.

The Journal of Contemporary Dental Practice (2021); 10.5005/jp-journals-10024-3117

INTRODUCTION

Dental management in children not only restores their oral health but also installs a positive attitude in children toward dentistry. This entity solely depends on the success rate of the treatment rendered to a child, which puts a pediatric dentist to stand in the foremost position to select the most appropriate procedure and novel materials to accomplish the same.

Pediatric dental management is strictly time-dependent. So, before selecting a management protocol, all other factors like dental age, chronological age, growth, development, etc., should be taken into account.

Dental caries have a higher prevalence rate in children, especially in mixed dentition period due to their diet pattern change or lack in maintaining proper oral hygiene. In the case of dental caries with pulpal involvement, preserving the natural tooth by pulp therapy until its time of exfoliation is a vital aim in pediatric dental management, as they are said to be the most best space maintainers.

Among different pulp therapy strategies, vital pulpotomy is the topic of interest in this study. By definition, a pulpotomy is defined

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S. K. Inbanathan



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ORIGINAL RESEARCH

Chemical Characterization and Physical Properties of Dental Restorative Composite Resin with a Novel Multifunctional Cross-linking Comonomer

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Source of support: Nil

Conflict of interest: None

ABSTRACT

Aim and objective: To chemically characterize restorative composite resin polymerized with 20 wt.% and 40 wt.% dipentaerythritol penta-/hexaacrylate (DPEPHA) comonomer. Furthermore, this study aimed to evaluate the conversion degree (DC) and glass transition temperature (T_g) of the newly formed copolymer.



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Comparison of Oxidant Stress Levels among Healthy, Chronic Periodontitis, and Ischemic Heart Disease Subjects with Presence or Absence of Chronic Periodontitis

Abstract

Objective: To investigate the total oxidant levels in healthy, chronic periodontitis (CP), and ischemic heart disease (IHD) and to check for any correlation among them. **Materials and Methods:** A sample of 80 were split into four groups of healthy subjects (Group I), CP subjects (Group II), IHD subjects (Group III), and IHD subjects having periodontitis (Group IV). The serum and saliva samples collected were analyzed for levels of hydrogen peroxide (H_2O_2), hydroxyl radical (OH^\cdot), nitric oxide (NO), and superoxide radical (O_2^\cdot). **Results:** There were significant ($P < 0.05$) variances in the mean serum and salivary levels of hydrogen peroxide, hydroxyl radical, NO, and superoxide within the 4 groups. Oxidant levels of both serum and saliva were lower in disease groups of Group II, III, and IV as compared to healthy controls, with different patterns. **Conclusion:** The oxidant levels (H_2O_2 , OH^\cdot , NO, and O_2^\cdot) are significantly hampered in periodontitis and IHD subjects as compared to healthy subjects. The oxidants, whether serum or salivary, did not always show the proportional change as a result of change in oxidant stress due to disease as positive correlation was observed only in the serum H_2O_2 and salivary NO radical levels and between serum superoxide dismutase radical and salivary H_2O_2 in Group I. In Group III, there was a positive correlation between serum NO radical and salivary H_2O_2 .

Keywords: Oxidant stress, periosystemic interlink, reactive oxygen species

Introduction

Periodontium is an investing and supporting tissue of human dentition. Periodontal diseases are some of the oldest and most common diseases which cause soft and hard tissue destruction ultimately leading to tooth loss.^[1]

Chronic infection and inflammation are an underlying feature of periodontal disease and the same are presently being thought of as new risk factors for atherosclerotic cardiovascular disease (CVD).^[1-3] Studies revealed that periodontal disease has the capacity to increase the inflammatory burden which can amplify and kick-start the process of atherosclerosis.^[3] Increased levels of oxidants/reactive oxygen species (ROS) leads to a state of oxidative stress and has been found to be connected with the unfolding mechanism of a large number of chronic diseases, such as cardiovascular and periodontal diseases.^[4,5]

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Oxygen is crucial for function because it is indispensable for many metabolic functions, which include respiration at cellular level, but is deleterious for the cells when present in reactive form.^[6,7] Oxidants/ROS are one such reactive and unstable species which in excess can create havoc in exacerbating periodontal disease by creating a state of oxidant stress when in excess. These results could put forward an idea that periodontal therapy may affect local ROS production, which would, in turn, alter the oxidative state at the systemic level.^[8] In turn, this host discomposure could represent one of the connecting links and the association between periodontal therapy and vascular function changes.^[9] Oxidants/ROS are highly reactive and have been identified as important signaling molecules in various cellular processes.^[6] Molecular oxygen is the source for ROS and are capable to damage the proteins, lipids, and deoxyribonucleic acid if not neutralized by antioxidant substances.^[6] Oxidants can exist in radical forms such as superoxide ($O_2^{\cdot-}$),

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Original Article

Immunohistochemical detection of 8-hydroxydeoxyguanosine: A biomarker of oxidative DNA damage in oral submucous fibrosis

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Abstract

Background: Oral submucous fibrosis (OSMF) is one of the common potentially malignant disorders prevailing in India. The primary etiological factors include tobacco and arecanut, which contain numerous reactive oxygen species (ROS). ROS attack guanine bases in DNA and form 8-hydroxydeoxyguanosine (8-OHdG), which can be detected in patients who have diseases associated with oxidative stress. The oxidative DNA damage produced by oxidative stress may induce malignant transformation.

Aim: The aim of the present study is to detect the expression of 8-OHdG in OSMF patients and compare the expression within different grades of OSMF and also normal buccal mucosa.

Materials and Methods: A total of 30 samples were examined for the immunohistochemical expression of 8-OHdG. The control group included 10 formalin-fixed paraffin-embedded tissue blocks of the normal buccal mucosa. The study group includes 20 cases of formalin-fixed paraffin-embedded tissue blocks of OSMF (5 cases in each grade of very early, early, moderately advanced and advanced cases of OSMF). Three-micron thick tissue sections were made from each sample and stained with 8-OHdG antibody. The results were statistically analyzed using Kruskal–Wallis and Mann–Whitney U test

Results: Statistically significant difference exists in the intensity of 8-OHdG expression between the study groups. The *P*-value obtained was <0.001, which was highly statistically significant.

Conclusion: The present study is the first attempt to evaluate the expression of 8-OHdG in tissue samples of OSMF that revealed the role of free radicals and oxidative DNA damage in these patients. Further research with larger sample size, clinicopathologic correlation and long-term follow-up will shed more light on the pathogenesis of OSMF. It will also be useful for the development of new therapeutic strategies targeting treatment modalities for OSMF.

Keywords: 8-Hydroxydeoxyguanosine, immunohistochemistry, oral submucous fibrosis, oxidative DNA damage

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Immunohistochemical detection of 8-hydroxydeoxyguanosine: A biomarker of oxidative DNA damage in oral submucous fibrosis

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Abstract

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Conclusion: The present study is the first attempt to evaluate the expression of 8-OHdG in tissue samples of OSMF that revealed the role of free radicals and oxidative DNA damage in these patients. Further research with larger sample size, clinicopathologic correlation and long-term follow-up will shed more light on the pathogenesis of OSMF. It will also be useful for the development of new therapeutic strategies targeting treatment modalities for OSMF.

Keywords: 8-Hydroxydeoxyguanosine, immunohistochemistry, oral submucous fibrosis, oxidative DNA damage

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Evaluation of salivary alkaline phosphatase levels in tobacco users to determine its role as a biomarker in oral potentially malignant disorders

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Abstract

Background: Elevated salivary alkaline phosphatase (S-ALP) levels have been observed in oral squamous cell carcinoma, but its status in tobacco users and in individuals with oral potentially malignant disorders (OPMDs) is less explored.

Aims and Objectives: The aims and objectives were to estimate and compare the levels of S-ALP among tobacco users, nonusers and in individuals with OPMD.

Materials and Methods: The study population comprised 42 individuals, categorized into four groups with/without tobacco usage habit and with/without lesion. 5 ml of unstimulated saliva sample was collected, centrifuged at 3000 rpm for 15 min and supernatant separated. S-ALP was estimated in the supernatant by using kinetic photometric method in an automatic analyzer.

Results: Data obtained were subjected to statistical analysis. The mean S-ALP was 18.00 IU/L for normal individuals without tobacco usage, 4.60 IU/L for smokers without lesion, 7.50 IU/L for tobacco chewers without any lesion and 64.90 IU/L for individuals with OPMD. The mean difference between the groups was statistically significant ($P < 0.001$) using Kruskal–Wallis' ANOVA. No statistically significant difference ($P > 0.05$) was obtained in the S-ALP levels between tobacco users and nonusers and between smokers and tobacco chewers, using Mann–Whitney U-test. S-ALP levels in individuals with OPMD were statistically significantly higher ($P < 0.001$) than those without lesions, with or without tobacco usage habit, using Mann–Whitney U-test.

Conclusion: We conclude that S-ALP could be used as a reliable noninvasive biomarker in monitoring OPMD.

Keywords: Biomarkers, saliva, salivary alkaline phosphatase, smokeless tobacco chewers, smokers, tobacco

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INTRODUCTION

Oral potentially malignant disorders (OPMDs), a terminology suggested by the World Health Organization in 2007^[1] for premalignant lesions and conditions, has

been reported with a high-risk percentage of malignant transformation to oral squamous cell carcinoma (OSCC). OSCC accounts for over 30% of all malignancies in the Indian population.^[2] Although many etiologic factors

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Prevention and treatment information (HHS)

Español

Indian J Dent Res. Sep-Oct 2019;30(5):703-707. doi: 10.4103/ijdr.IJDR_815_18.

Cytological intracellular glycogen evaluation using PAS and PAS-D stains to correlate plasma glucose in diabetics

S Shamala Ravikumar¹, T R Menaka¹, G Vasupradha¹, K Dhivya¹, J Dinakaran¹, V Saranya¹**Affiliations**

PMID: 31854360 DOI: 10.4103/ijdr.IJDR_815_18

Abstract

Background: Oral cytology studies have claimed that cytoplasmic Periodic Acid Schiff (PAS) positivity in type-2 diabetics is due to glycogen content. But, it can also be due to mucin and glycoconjugates.

Aim: 1. To confirm that cytoplasmic PAS positivity in type-2 diabetics is due to glycogen using diastase. 2. To know the effect of diabetes by determining the number of glycogen-containing cells in the smear. 3. To assess the impact of duration of diabetes based on PAS staining of cells. 4. To correlate between random blood glucose level and the number of PAS-positive cells.

Materials and methods: Study population comprised 45 individuals with 30 type-2 diabetics as case group (Group I < 5 years duration; Group II > 5 years duration) and 15 healthy volunteers (age and gender-matched) as control. For all subjects, random blood glucose was estimated and two cytosmears were obtained. The smears were stained with PAS and PAS-diastase stains (PAS-D). Staining intensity was documented as score 1 (mild-to-moderate) and score 2 (moderate-to-intense) and data obtained were statistically analyzed in SPSS version 16.0.

Results: Mann-Whitney U test revealed that in diabetics cytoplasmic PAS positivity is because of glycogen ($P < 0.05$). There is an increase in the number of glycogen-containing cells ($P < 0.05$) in diabetics. The duration of diabetes had less impact on intracellular glycogen accumulation ($P > 0.05$). Spearman's correlation test revealed no significant correlation ($P > 0.05$) between random blood glucose and a number of PAS-positive cells.

Conclusion: PAS positivity is because of intracellular glycogen accumulation in type-2 diabetics. It can convey the glycaemic status of an individual in the recent past, thus a beneficial role in screening and therapeutic monitoring.

Keywords: Cytology; diabetes; diastase; glucose levels; glycogen; periodic acid Schiff.

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Español

J Forensic Leg Med. 2019 Nov;68:101863. doi: 10.1016/j.jflm.2019.101863. Epub 2019 Aug 27.

The Indian dental litigation landscape: An analysis of judgments on dental negligence claims in Indian Consumer Redressal Forums

Rooban Thavarajah¹, Vijayakumar Saraniya², Bhavanisankar Priya³

Affiliations

PMID: 31494526 DOI: 10.1016/j.jflm.2019.101863

Abstract

Introduction: Dental malpractice/negligence litigations against dentists in India is not widely studied. The aim of this study is to report the Indian dentist related litigation landscape in consumer redressal forum (CRF) and to understand more of the nature of the same.

Material and method: 111 cases of judgments of dental malpractice in Indian CRF were collected. Useful information was extracted, reported in a grid and statistically analyzed. Data was compared by claim, specialty, treatment offered, days lapsed and compensation awarded. $P \leq 0.05$ was taken as statistically significant.

Results: In all, 44 (39.63%) dentists were found guilty. Thirty dentists had produced at least one evidence in their favor. Among them, 23 outcomes were in dentist's favor. ($P = 0.02$) The mean wait for final judgment was $1945 \pm 1286(193-6762)$ days. The mean compensation claimed was INR 577287 ± 905898 . Presence of evidence (dentists/patients) had an impact on the days to reach a judgment as well as compensation.

Conclusion: Indian dental litigation landscape CRF has been described for the first time. We identified that CRF litigation of dental malpractice are few, as compared to number of procedures performed in India. Oral surgical procedures were often involved and 40% of instances, dentists were guilty and mean compensation awarded was INR 103998 ± 158976 .

Keywords: Consumer redressal forum; Dental malpractice; Dental negligence; Dental treatment; Expert evidence; India.

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Correlation Between Body Mass Index and Dental Caries Among Three- to 12-Year-Old Schoolchildren in India: A Cross-Sectional Study

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Disclosures can be found in Additional Information at the end of the article

Abstract

Introduction: Diet is a deeply ingrained element of a person's life. Children's dietary habits are a significant contributor to obesity and dental caries. Dental caries during childhood continues to be a significant public health concern, while childhood obesity is increasingly being cited as a major public health problem. This study aimed to assess the correlation between body mass index (BMI) and dental caries in children aged three to 12 years who attended both government and private schools in Chennai, Tamil Nadu, India.

Materials and methods: We conducted a cross-sectional review of 2200 children aged three to 12 years with clinically recorded dental caries. The World Health Organization diagnostic criteria for BMI percentile was used to evaluate and record dental caries clinically. The Mann-Whitney and the Kruskal-Wallis tests were used for univariate comparisons.

Results: Mean values between the overweight category and underweight category revealed no significant differences.

Conclusion: We found no association between BMI-for-age and dental caries in children in both primary and mixed dentition. This relationship should be investigated further by longitudinal studies.

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Categories: Miscellaneous, Other, Dentistry

Keywords: obesity, school children, over weight, dental caries, body mass index

Introduction

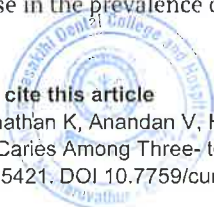
Obesity and dental caries are multifactorial conditions, both having comprehensive etiology and factors such as dietary habits and available nutrients, oral hygiene, or saliva [1]. Studies have shown that excessive food intake or inadequate physical activity are underlying causes of obesity [2]. The interaction of genetic, environmental, and behavioral factors could lead to childhood obesity has been reported [3]. Changes in diet and lifestyle, such as an increase in wealth and access to carbohydrate-rich, high-calorie food and drinks could be attributed to the increase in the prevalence of both dental caries and obesity [4]. The prevalence of obesity has

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Technical note

Development of a new V-shaped implant with locking plates and screws for mandibular fracture fixation: an in vitro study using finite element analysis

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We designed a V-shaped plate to involve both lines of osteosynthesis within a single plate. Implant dimensions are shown in Figure 1. An internal locking mechanism is incorporated to accentuate stability across the fracture line.

The V plate can be positioned in four different directions: 0° (∇), 90° (<), 180° (∧), and 270° (>).

We have compared this implant with standard mini-plates that are commonly used for the treatment of anterior mandibular fracture using Finite Element Analysis.

Displacement between the fracture surfaces after fixation

Healing of the fracture is possible only if the displacement between the fracture surfaces is within the range 100–150 μm.^{1,2}

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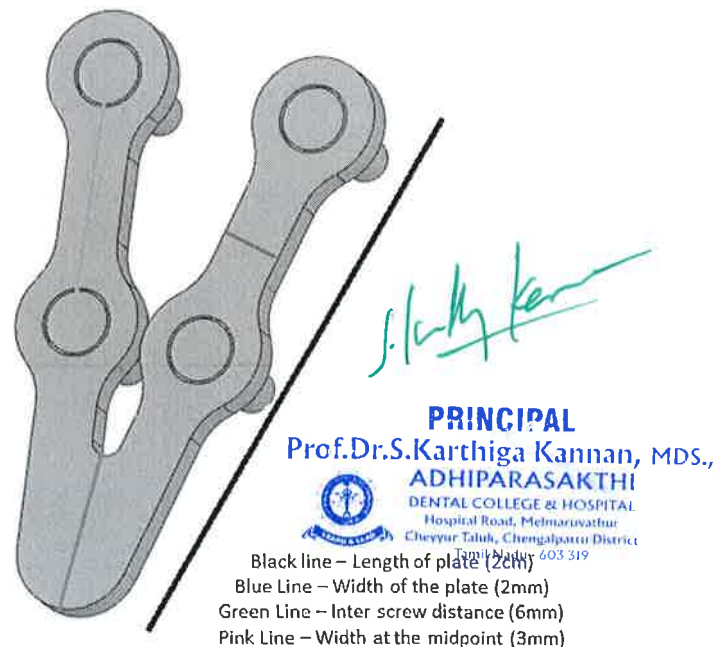


Fig. 1. Diagram of the dimensions of the V-shaped plate.

Tensile stress on the mandible

The maximum permissible tensile stress for cortical bone ranges from 92–188 MPa.³

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Eagle's Syndrome: A Case Report of a Unilateral Elongated Styloid Process

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Disclosures can be found in Additional Information at the end of the article

Abstract

When styloid process elongation or stylohyoid ligament calcification can lead to various symptoms, such as dysphagia, facial pain, globus sensation, and headache, it is termed Eagle's syndrome. It may be unilateral or bilateral. Though the overall prevalence in adults is 4%, only 0.16% of patients are symptomatic. Since the symptoms mimic several other orofacial pains and neuralgia, the diagnosis must be made through a detailed history, clinical examination, and various imaging modalities. The case of facial pain in a 22-year-old female patient who was diagnosed to have a unilateral elongated styloid process is discussed in this paper.

Categories: Radiology, General Surgery, Anatomy

Keywords: eagle's syndrome, elongated styloid process, facial pain

Introduction

The styloid process is a pointed, lean, bony projection situated at the front of the stylomastoid foramen and arises from the temporal bone [1]. In 1652, Pietro Marchetti was the first to describe an ossifying process of the stylohyoid ligament [2]. Later, in 1937, an otorhinolaryngologist named Eagle first described a syndrome characterized by an elongated styloid process and pain in the cervicofacial region [3]. The prevalence is about 4% of the population with most of them being asymptomatic [4] and between 4% and 10% of the patients having an elongated styloid experience the symptoms [5]. Women are more frequently affected as compared to men and the average age of the patients presenting with symptoms is usually 40 years. This is attributed to the fact that as age advances, the elasticity of the soft tissues and the associated ligaments is lost, putting increased pressure on the adjoining hard tissues [6]. In most of the individuals, the normal styloid process length ranges between 2 cm and 3 cm, and it is considered elongated when it is longer than 3 cm [8].

The presenting symptoms include dull, aching pain on either side of the throat, difficulty in swallowing, foreign body sensation in the throat, pain in the facial region, and recurrent headache and vertigo [4]. Since these symptoms mimic many maxillofacial and oropharyngeal disorders and neuralgias, a thorough clinical history, examination, and radiological assessment are necessary for attaining a diagnosis. Here, we present one such case of Eagle's syndrome in a young female patient and explain the diagnosis and successful management of the same.

Case Presentation

A 22-year-old female patient reported to our clinic and complained of pain on the right side of


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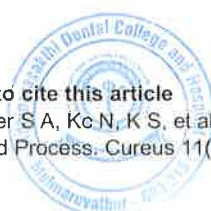
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Original Research

An *In Vitro* Evaluation of Fracture Resistance of Endodontically Treated Maxillary Central Incisor Restored with Custom-Made Cast Post and Core with Uniform and Nonuniform Core Ferrule Heights

Premkumar Elavarasu, Chellaswamy Savarimalai Karumaran¹, Rajamani Indira¹, Ramachandran Anilkumar¹, Rekha Mani², Raghunathan Natarajan

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ABSTRACT

Aim: The aim of this study was to evaluate *in vitro* fracture resistance of endodontically treated teeth restored with custom-made cast post and core having uniform and nonuniform core ferrule heights. **Materials and Methods:** Thirty-five freshly extracted human maxillary central incisors were included in this study. All teeth were subjected to standard root canal treatment. The teeth were randomly divided into five groups—Group 1: uniform ferrule (2mm buccal, lingual, and proximal), Group 2: uniform ferrule (3mm buccal, lingual, and proximal), Group 3: nonuniform ferrule (2mm buccal, 3mm lingual), Group 4: nonuniform ferrule (2mm buccal, 4mm lingual), and Group 5: no ferrule. The teeth were sectioned horizontally 4mm above cemento-enamel junction and post space preparation was performed maintaining 4mm of apical gutta-percha. Ferrule was prepared according to dimension designated for each group. Custom-made cast post and core were fabricated and luted using zinc phosphate cement. Testing was conducted using universal testing machine with application of static load (Newton), and failure load was recorded. Data were analyzed by one-way analysis of variance and Tukey test. The mode of fracture was noted by visual inspection for all specimens. **Result:** Significant differences ($P < 0.001$) were found among mean fracture forces of test groups. Group 1: 1181.66 ± 68.29 , Group 2: 1455.58 ± 173.11 , Group 3: 1019.00 ± 52.55 , Group 4: 971.58 ± 66.52 , and Group 5: 888.00 ± 60.56 . The presence of nonuniform ferrule height resulted in a significant decrease ($P < 0.0001$) in mean fracture strength compared to uniform 2- and 3-mm core ferrule height. **Conclusion:** The central incisors restored with cast post and core and crowns with 3-mm uniform core ferrule were more fracture resistant compared to central incisors with nonuniform core ferrule height. Both the uniform and nonuniform core ferrule groups were more fracture resistant than the group that lacked ferrule.

KEYWORDS: Custom-made cast post and core, endodontically treated teeth ferrule, fracture resistance

INTRODUCTION

Root-filled anterior teeth with extensive loss of tooth structure often requires a post and core due to lateral and shearing force acting on it, and presence of smaller pulp chambers as compared to molars.^[1]

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RESEARCH ARTICLE

CALCIFYING EPITHELIAL ODONTOGENIC TUMOUR ASSOCIATED WITH IMPACTED CANINE IN
MAXILLA – A CASE REPORT

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ABSTRACT

Calcifying Epithelial Odontogenic Tumour (CEOT), also known as Pindborg Tumour is a rare odontogenic epithelial neoplasm. So far, nearly 200 cases have been reported in literature. We are reporting a case of Calcifying Epithelial Odontogenic Tumour in a 25 year old male patient with a painless bony swelling in the maxilla. Approximately, 50% of the cases are associated with an unerupted tooth or an odontome, and it was the same with our case, except that it was an impacted maxillary canine over shadowed by a retained deciduous tooth. Considering the intrabony location of the lesion and its limited size, we opted for a more conservative surgery. The clinical, radiographic and histopathologic features and the surgical treatment are discussed with relevant references.

INTRODUCTION

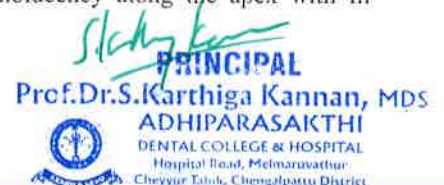
The term Calcifying Epithelial Odontogenic Tumour was first introduced into the scientific literature almost 50 years ago by the late Dr. Jens J. Pindborg (1956, 1958). CEOT is a benign, but locally aggressive tumour. It usually presents as a hard painless mass, generally affecting the mandible more than the maxilla. The characteristic histopathologic description consists of sheets and islands of polyhedral epithelial cells with multiple calcifying bodies with laminated appearance representing Liesegang rings (Neville, 2002). Surgical treatment varies from simple enucleation to resection of the affected bone followed by reconstruction of the resected jaws.

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Here, we present a case of CEOT associated with impacted canine in maxilla which is treated by simple enucleation and removal of the impacted tooth

Case Report

A 25 year old male patient came for a routine dental examination. The history of presenting illness revealed that the patient had sensitivity in upper front tooth which aggravated on taking hot or cold food and relieved within minutes. No relevant history was present in the past medical and dental history. On examination no significant finding was present extra orally. Intraoral examination revealed retained deciduous in 63, cervical abrasion in 63, sensitive to probing (Fig1). On routine radiological investigation, IOPA in 63 revealed a unilocular radiolucency along the apex with ill-defined borders.



BIOPSY – A PRICELESS TOOL

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ABSTRACT

Biopsy is defined as the removal of tissue from the living organism for the purpose of diagnosis and treatment. Performing a good biopsy procedure needs appropriate training and good hand skill. There are various biopsy procedures and each procedure has its own advantages and disadvantages. Thus it is necessary for the dental practitioner to choose the appropriate biopsy procedure to arrive at a confirmatory diagnosis.

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Keywords: biopsy, brush biopsy, electrosurgery, excisional, exfoliative cytology, fine needle aspiration, incisional, punch biopsy

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Patient Satisfaction Index Undergoing Orthodontic Treatment In Dental Hospital Based Institution Across Chennai: A Questionnaire Study

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ABSTRACT

Background: The aim of the present study was identifying patient and treatment factors associated with patient satisfaction in a group of adolescent patients.

Materials and method: A questionnaire study was carried out among outpatients attending the dental hospital-based institutions across Chennai during 2019-2020 to 200 subjects undergoing orthodontic treatment.

Result: Overall data shows that 53% of patient were satisfied with the orthodontic treatment and 47% of patient were not satisfied with the orthodontic treatment.

Conclusion: This study shows that the satisfaction of patients with orthodontic treatment has significantly increased in the present days. No correlation was found between gender and patient satisfaction.

Keywords: Patient satisfaction index, orthodontic treatment, dental hospital.

INTRODUCTION

Malocclusion is one of the most important dental condition which may negatively impact the individuals self-esteem and their emotional status apart from affecting the dental functions and the facial aesthetics.^(1,2,3) Several studies in the literature can be found regarding the impact of orthodontic treatment in the speech, appearance, social and inter personal relationship thereby improving the quality of the life of the individuals.^(4,5,6) Many factors such as quality of care, competence of the dentist, relationship between orthodontic treatment provider and patients, accessibility and convenience, and the cost of treatment determine patient's satisfaction ⁽⁷⁾.

Many studies state that orthodontic treatment improves the smile aesthetics of the patient that has an influence on patient's confidence and social interaction ⁽⁸⁾. The aim of the present study was identifying patient and treatment factors associated with patient satisfaction in a group of adolescent patients.

MATERIALS AND METHODS

In order to assess the patient's satisfaction index, a questionnaire study was carried out among outpatients attending the dental hospital-based institutions across Chennai during 2019-2020. Inclusion criteria included patients with Angles


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Comparison of Dimensional Accuracy of Crowns and Bridges Fabricated Using Digital versus Conventional Impression Technique - A Systematic Review

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Type of Publication: Review Paper

Conflicts of Interest: Nil

ABSTRACT

Purpose: The purpose of this systematic review is to compare the dimensional accuracy of fixed dental prostheses fabricated by the digital impressions to that of the conventional impressions

Materials and method: Internet sources such as Pubmed, Cochrane, Google scholar were electronically searched using the keywords 'dimensional accuracy', 'Fixed prosthodontics', 'digital impression', 'conventional impression' sort by 10 years and other journals were hand searched. The studies evaluating the dimensional accuracy in terms of marginal fit, internal fit, trueness and precision of single, short span, cross arch and complete arch fixed dental restorations fabricated by the digital and conventional impressions were selected.

Result: Most of the studies resulted that the dimensional accuracy of the prosthesis fabricated by digital impressions were better than that of conventional impressions. The marginal and internal discrepancies were higher in conventional groups. The studies involving cross arch and complete arch impressions showed better dimensional accuracy with the conventional groups than the digital groups. But, both the groups resulted within acceptable range of discrepancies and are not statistically significant.

Conclusion: The conclusion is based mainly on in vitro studies. Digital impressions are better in fabrication of single and short span restorations. In case of cross arch and complete arch restorations, the conventional impressions showed better accuracy than the digital impressions.

Keywords: Conventional impression, Digital impression, Dimensional accuracy, Fixed prosthodontics, Impression

INTRODUCTION

Fixed partial dentures have been a successful mode of restoring the missing tooth for years. The emergence of materials like zirconia, Polyether Ether Ketone (PEEK) has aided in the fabrication of prostheses not only fulfilling the functions but also the aesthetic need of the patient. With concern to the fixed partial dentures such as single crowns, multiunit bridges, etc the major factor that determines the quality and success of the prosthesis is the

dimensional accuracy. Poor marginal fit may lead to overhang, plaque accumulation followed by periodontitis, root caries leading to the overall failure of the prosthesis, but the poor marginal fit is not the only cause attributed to marginal leakage. Previous studies have concluded that the accepted crown margin –finish line discrepancy is 34-119µm⁽¹⁾. FPDs fabricated with marginal discrepancy of less than 120µm were successful⁽²⁾. Internal fit is an important



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Diagnostic Validity of Orthopantomogram Compared to Dual Energy X-ray Absorptiometry Scan in Detecting Osteoporosis

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Abstract

Introduction Osteoporosis is one of the most common and rampant metabolic bone disorders among the geriatric, particularly affecting postmenopausal women. Even though resorption tends to occur more rapidly in bones with a higher proportion of trabecular bone (e.g., vertebrae, pelvis, calcaneus), bones with significant cortical bone content also do undergo resorption, for example, mandible. The dental manifestations that may indicate low-bone density include loose teeth, receding gums, and ill-fitting or loose dentures.

Objective To validate the efficacy of orthopantomograms (OPGs) in recognizing bone mineral density (BMD) changes of the mandible using mandibular cortical index (MCI) and substantiate the same with dual energy X-ray absorptiometry (DEXA) scan on femoral neck and spine.

Materials and Methods This cross-sectional study comprised 60 geriatric patients of both genders. All the patients were subjected to panoramic radiographs wherever clinically indicated. The visual analysis was done based on the radiographic appearance of the mandibular cortical border and results were compared with DEXA scan reports, followed by an analysis of three grades of MCI and BMD statistically.

Results In our study, out of 40 patients in C2 and C3 subgroups, 67% and 20% were normal, respectively. The incidence of osteopenia was 33% in the C2 group and 70% in the C3 group, whereas Osteoporosis was present only among 10% of the population in the C3 group. The difference between the groups are statistically significant ($p = 0.01$). These findings imply that a progressive link exists between BMD and deteriorating cortical morphology.

Conclusion The purpose of this study is that dentists will be able to refer patients to physicians of suspected low BMD, based on incidental findings on panoramic radiographs for further examination. There is a statistically significant correlation present between DEXA and MCI, so the latter can also be used for screening BMD changes.

Keywords

- ▶ osteopenia
- ▶ osteoporosis
- ▶ geriatric
- ▶ bone mineral density
- ▶ orthopantomography
- ▶ dual-energy X-ray absorptiometry scan

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Antifungal Efficacy of *Wrightia tinctoria* (Roxb.) R.Br on *Candida* Species Isolated from the Oral Cavity: an *In vitro* Study

Abstract

Introduction: Nature is a valuable source of active ingredients that needs to be explored, especially its utilization in the medical field. Owing to the limited availability of antifungal drugs and also considering their side effects, there is always a constant need for a safe and competent alternative. *Wrightia tinctoria*, a medicinal tree, has been reported to possess potent antifungal activity against commercially available candida strains [American type culture collection (ATCC) and microbial type culture collection (MTCC)]. This could be beneficial clinically only if its antifungal activity could be proved against candida species isolated from clinical samples as the commercially available candida strains might have lost its pathophysiological characteristics on repeated subcultures. Hence, with this background, we performed this study to determine the antifungal efficacy of the extracts obtained from the leaves of *W. tinctoria* against the candida species isolated from the oral cavity. The aim of this study was to determine the antifungal efficacy of *W. tinctoria* on candida species isolated from the oral cavity. **Materials and Methods:** To determine the antifungal activity, acetone, ethyl acetate, and chloroform extracts of leaves of *W. tinctoria* were used. The study population consisted of five healthy volunteers above 18 years of age without any harmful habits and five patients at increased risk of candida infection. Saliva samples were collected by oral rinse technique using phosphate buffered saline. Fluconazole was used as a positive control and the antifungal efficacy was determined using disk diffusion method. Kruskal-Wallis test was used to determine the significant difference between the extracts. **Results:** The mean zone of inhibition of acetone, ethyl acetate, and chloroform extracts of leaves of *W. tinctoria* was 10.8667, 11.0000, 10.1333 mm, respectively. **Conclusion:** Acetone, ethyl acetate, and chloroform extracts of *W. tinctoria* possess antifungal activity against candida species isolated from oral cavity.

Keywords: *W. tinctoria*, *Candida albicans*, antifungal activity

Introduction

Candida belonging to the kingdom Fungi causes superficial and deep/systemic opportunistic mycotic infections by expressing adhesins and invasins on its cell surface and invades the host cell by endocytosis or by elaborating enzymes.^[1-3] More than 150 species of candida are detected and among which *C. albicans* is the most common species associated with human infections.^[4] Candida infections are usually treated with antifungal drugs, but drug resistance is a major setback. *W. tinctoria* belonging to the family Apocynaceae has been used as medicines in Siddha, Unani, and Ayurveda since it possess antimicrobial, anti-inflammatory, anticancer, anthelmintic, and astringent properties.^[5-8] Numerous studies have

reported its antifungal activity on candida strains obtained from the culture centers such as microbial type culture collection (MTCC) and American type culture collection (ATCC).^[9,10] However, our study demonstrates the antifungal activity of *W. tinctoria* on candida species isolated from the oral cavity as it is a common opportunistic fungal infection encountered in day-to-day practice in dental clinics.

Materials and Methods

To prepare the plant extract, first the fresh leaves of *W. tinctoria* were collected from Kollimalai, Namakkal district, Tamil Nadu and was authenticated by a botanist [Figure 1]. The leaves were washed with

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ORIGINAL ARTICLE

Patients' Satisfaction Regarding The Dental Treatment Provided by Educational Dental School in Majmaah University

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ABSTRACT

Introduction : Patient satisfaction with health care is considered to be one of the main objectives of quality care. The satisfaction of the patients has been investigated in different colleges of dentistry in many countries. Assessment of the patients' feedback could help in promoting best quality of treatment.

Aims & Objective. The objective of this study is to determine patients' satisfaction regarding the quality of treatment at dental clinics of the College of Dentistry at Majmaah University.

Material & Method: Self-administrated questionnaire was distributed to patients attending to dental clinics. It was composed of twenty-four closed questions measuring patient satisfaction regarding the dental care provided. This questionnaire had three main themes. First, was the reason why patients chose the dental school and the purpose of the visit. Second, was based on the ease of getting an appointment and staff behavior. Third was related to student/doctor communication and attitude.

Results: A total of 442 questionnaires were collected. Response rate was 88.4% as 442 out of 500 questionnaires were returned. The most of the patients were male (68.1%) whereas female were (31.9%). A total of 424 (95.9%) of the participants agreed that it was easy to get an appointment in the dental clinics and a total of 278 (62.9%) were very satisfied with the performance of the reception. Regarding to the treatment Majority of the participant were satisfied with the treatment provider, 295(66.7%) very satisfied.

Conclusions: The results of the study reported that dental clinics in the college of dentistry in Majmaah university has been successful in achieving participant's satisfaction regarding the services, staff, treatment and patient-dentist interaction.

Key words: Dental care, Education, patient satisfaction.

INTRODUCTION

Patient satisfaction with health care is considered to be one of the main objectives and prerequisites for quality care, ¹ and is an indicator used to determine the level of treatment given and the relationship seen between patient and the health care provider². The outcome of a satisfied patient therefore influences the quality of a hospital or clinic, and it is widely accepted that a successful dental practice cannot be established without ensuring patient satisfaction³⁻⁴. This will inevitably rely on dental care and services provided, on confidentiality, on the integrity of appointments and on the staff's behavior⁵. Therefore, observing patient satisfaction with the dental service offered is very critical in order to satisfy patient needs, increase patient compliance and ensure the success of the dental institutions⁶. In addition, patients' satisfaction shows the advantage and disadvantage of dental centers and thereby helps to enhance care efficiency and prospective plans⁷.

The ease of getting appointments was considered to be the most significant consideration for patient satisfaction⁸. Patients demonstrate better cooperation with certain dentists who are diligent and have time to meet the needs of the patients⁹. Decent quality, free or reduced treatment, and accessibility ease are the main reasons to seek treatment in dental schools¹⁰⁻¹¹. Dentists' concerned attitude and personality are correlated with a high level of

patient satisfaction, which lead patients to visit the same dentist regularly¹².

The educational institutes provides mutual advantages for both students and patients by offering training opportunity for students and addressing patient dental care needs and it is very important to ascertain patient satisfaction with the dental service provided in order to meet patient demands, improve patient compliance and ensure the performance of the dental institution¹³. This could allow students to meet their clinical requirements on time as happy patients cooperate more and attend their appointments. Although all dental clinics and hospitals work towards patient satisfaction and patients are the most important stakeholders in such setups, in educational setting student learning becomes one of the main priorities and hence patient satisfaction may be compromised at times.

The College of Dentistry in Zulfi is an integral college of Majmaah University, Saudi Arabia. It has provided the city with a wide range of free dental services. The clinical services provided by our school constitute about 60% of the total services of government dental clinics in Al Zulfi Governorate. Numerous studies to evaluate patient satisfaction have been conducted in many dental schools, however most of the studies done in the kingdom of Saudi Arabia are based in bigger cities like Riyadh, Jeddah, Madinah etc., where the patients have more options of



Facial Asymmetry due to Hemifacial Microsomia Managed by an Interdisciplinary Approach: A Case Report

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ABSTRACT

Aim and objective: The aim of this case report is on an interdisciplinary orthodontic and surgical treatment approach of facial asymmetry due to congenital hemifacial microsomia (HFM).

Background: Hemifacial microsomia is the second common congenital craniofacial deformity after cleft lip and palate, which presents with different clinical characteristics, including an extremely variable asymmetrical presentation. And there is no standardized treatment protocol for this type of asymmetry hence individualized treatment plan for every patient can result in the best esthetic and functional stability.

Case description: This case study emphasizes on an adult patient who has congenital HFM with class I skeletal malocclusion involving asymmetry from the supraorbital level to the lower border of the face. Pre-surgical orthodontics is done initially by aligning the teeth and placing asymmetrical bite block, followed by LeFort I osteotomy with differential impaction (transverse) and bilateral sagittal split osteotomy with rotation along with advancement genioplasty, and finally, post-orthodontic settling done.

Conclusion: A team effort of surgical orthodontists and surgeons with the aid of advanced imaging and software technology made us make an amazing change in patient's life both esthetically and functionally.

Clinical significance: This new innovative method is both a time-saving and conservative method both for patients and dentists.

Keywords: Advancement genioplasty, Bilateral sagittal split osteotomy, Hemifacial microsomia and LeFort I osteotomy.

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BACKGROUND

Hemifacial microsomia (HFM) is a congenital complex malformation syndrome with varied nomenclature with a large host of genetic and embryotoxic associations. The occurrence ranges from 1 in 3,500 to 1 in 5,000 live births, with 3:2 male predominance. The exact etiology of HFM is always varying. Pathogenesis involves in disturbed development of first and second branchial arches, which led to underdevelopment of the temporomandibular joint, mandibular ramus, masticatory muscles, ears, and sometimes it affects facial nerves and muscles.¹ A wide spectrum of clinical features was involved like the facial skeleton, muscle, and other organs. Hemifacial microsomia is associated with a deficiency of hard and soft tissues on one side of the face.²

Hemifacial microsomia varies from a minor asymmetry to severe under-development of the semi-facial side along with orbital implications. In certain patients, there will be partial or even a total absence of the ear. Chin and facial midline have eccentrically deviated to the affected side. Commonly one corner of the mouth is situated higher than the other side and result in the rise of the oblique lip line. Sometimes, asymmetry is also associated with unilateral hypoplasia of maxillary bones, temporal, zygomatic arch, and malformations of both external and internal parts of the ear.³

There are various clinical manifestations for this disorder and many classifications and the scoring system have been developed to help and categorize these patients. Véliz et al. in 2016 has summarized all the classifications (Fig. 1).⁴ One of the classifications that are commonly followed is the classification system of Pruzansky, Pruzansky's classification modified by Kaban and OMENS. The treatment modality has two approaches—the early and late approaches. In the early (growth phase), conventional surgery by an autologous costochondral bone graft or distraction

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osteogenesis can be done. While in the late (after the active growth phase), conventional Bi-jaw surgery or bimaxillary distraction osteogenesis was advised.⁵

Hemifacial microsomia is always associated with deviation of facial bone and malocclusion of dentition. These two changes



In Vivo Efficacy of Povidone-iodine Mouth Gargles in Reducing Salivary Viral Load in COVID-19 Patients: A Systematic Review

TS Vinodhini Sudhakar¹, Sudhakar Venkatachalapathy², Balaguhan Balasubramanian³, Kirthika Natarajan⁴, Mathan M Aiyathurai⁵

ABSTRACT

Aim and objective: Based on the published research, this article aims to systematically review the *in vivo* effectiveness of povidone-iodine (PVP-I) mouth gargles in reducing salivary viral load in COVID-19 patients.

Materials and methods: The inhibitory potential of different variables such as PVP-I, chlorhexidine gluconate (CHX), cetylpyridinium chloride (CPC), saline, and hydrogen peroxide (H₂O₂) were tested against SARS-CoV-2 in recent clinical trials. In this systematic review, appropriate randomized controlled trials (RCTs) for the evidence-based question: "what is the efficacy of PVP-I mouth gargle in reducing salivary viral load in COVID-19 patients?" were searched in Medline/PubMed, Scopus, Science Direct, Embase, Google Scholar, and the Cochrane Library database from January 15, 2020, to June 15, 2021, based on defined inclusion and exclusion criteria. From the selected articles, their references and reviews relevant to our topic were also looked for any missed studies.

Results: After a pertinent search for appropriate studies, five *in vivo* RCTs were selected and others were excluded. All the trials used reverse transcription-polymerase chain reaction (RT-PCR) for mRNA detection and quantitation. Povidone-iodine mouth gargle (0.5–1%) used by COVID-19 patients 4th hourly effectively reduced salivary SARS-CoV-2 viral load, thereby reducing the carriage of infectious virion in adults. Statistically significant increase in Ct values, post 5, 15, and 45 minutes, 3 and 6 hours post-rinsing demonstrated the strong antiviral effect of PVP-I.

Conclusion: In this COVID-19 pandemic, based on the published evidence of a few *in vivo* RCTs, it can be concluded that 0.5 to 1% PVP-I mouth gargle has the potency to effectively reduce the salivary SARS-CoV-2 viral load. To reinforce the use of PVP-I mouth gargles against SARS-CoV-2, this systematic review emphasizes the necessity for future research that is highly focused, robust, and has consistent techniques and a large sample size.

Clinical significance: Research on the efficacy of PVP-I mouth gargle should be framed to focus on the most effective minimal concentration, exposure time, and volume of mouth gargle as well as the SARS-CoV-2 strain. The effect of PVP-I mouth gargles on viral infectivity and their cytotoxic effect on epithelial cells were not distinguished in the studies reviewed. Hence, viral cell culture technique should be employed to establish the potential virucidal activity of PVP-I against SARS-CoV-2. Host immunity against SARS-CoV-2 should also be considered in assessing the effectiveness of mouth gargles.

Keywords: COVID-19, Mouth Gargle, Povidone-iodine, SARS-CoV-2, Treatment.

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INTRODUCTION

COVID-19 disease caused by SARS-CoV-2 is creating severe community and nosocomial outbreaks globally. The highly contagious nature and easy transmissibility of this Virion have made COVID-19 pandemic, alarmingly increasing the number of infections and death every day. The 2019 novel corona virus (SARS-CoV-2) is phylogenetically related to Bat SARS-like coronaviruses and belongs to the Betacoronavirus genus lineage B.^{1,2} However, the spike proteins ORF8 and ORF3b differ significantly from other known SARS-like coronaviruses, which may confer differences in pathogenicity and transmissibility from SARS-CoV.³

The receptor-binding protein (RBP) domain of S-protein (SARS-CoV-2) supports strong interaction with human ACE2 molecules,⁴ thus ACE2 plays a pivotal role in the cellular entry of this virus.⁵ High ACE2 expressing cells in the human body, such as type II alveolar cells of lung,^{5,6} absorptive enterocytes from ileum and colon,⁷ goblet and ciliated epithelial cells of nasal mucosa,⁸ epithelial cells of tongue (oral mucosa),⁹ cholangiocytes,¹⁰ myocardial cells, kidney proximal tubule cells, bladder urothelial cells,⁵ and their organs are potential target site for SARS-CoV-2 and are at high risk of infection and injury.

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COMPARATIVE EVALUATION OF RADIOGRAPHIC ASSESSMENT AND MICROLEAKAGE BETWEEN CONVENTIONAL AND A NOVEL METHOD OF ORTHOGRADE PLACEMENT OF MTA AT THE ROOT APEX- AN INVITRO STUDY.

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Abstract:

Context: New method of orthograde placement of mineral trioxide aggregate at the root apex to overcome the existing difficult placement.

Aim: To introduce a novel method of creation of a dense MTA plug at the root apex in open apical foramen cases.

To evaluate the radiographic assessment of apical plug and microleakage between conventional and a novel method of orthograde placement of MTA at root apex.

Settings and Design: In-vitro study with custom made alveolus replica.

Methods and Materials: 30 decoronated human maxillary central incisors were selected and open apex was created using peeso reamer of size 1- 6. They were then placed in custom made alveolus replica and divided into 2 groups.

Group 1: MTA placed using conventional messing gun method.

Group 2: MTA placed using novel method. This method comprised of making an impression of the apical third with gutta-percha stick, fabrication of solid MTA extra-orally and its placement in the root apex.

Then, radiographic assessment by clinicians and microleakage study using 2% methylene blue solution were performed.

Statistical analysis used: The data was analysed by Mann-Whitney U test.

Results: Clinicians reported superiorly condensed apical plugs when novel method was used. The novel method also revealed less microleakage compared to conventional method with statistically significant difference ($p < 0.001$).

Conclusion: Novel method was easy for orthograde placement of MTA at the apex and showed excellent compaction and had the least microleakage than conventional method.

Key Messages: Novel method will resolve the problems faced by conventional method and produce better apical seal.

Key words: Mineral Trioxide Aggregate (MTA), Apical Plug, Microleakage.

Introduction

Management of teeth with necrotic pulp and incompletely formed root apex is a challenging task because of lack of apical barrier.^[1] Calcium hydroxide has been widely used but requires variable period from 5–20 months to form the hard tissue barrier.^[2] Newer materials such as MTA and Bioceramics are replacing the use of Calcium hydroxide for the same.^[3] MTA has proven benefits over calcium hydroxide except for the disadvantage of difficult manipulation and placement during clinical procedure.^[4]

The aim of this study is to evaluate

1. The radiographic assessment and
2. The microleakage

between conventional and a novel method of orthograde placement of MTA at the root apex.

Subjects and Methods:

Materials Used:

1. Peeso Reamer- numbers 1, 2, 3, 4, 5, and 6 (LOT P15E058500) [Mani, India]
2. Gutta-Percha Sticks [Neelkanth, Jodhpur, India]
3. Addition Silicone (LOT-287569) [Zhermack Elite HD+, Italy]
4. Mineral Trioxide Aggregate (LOT-101305) [MTA ANGELUS, Brazil]
5. Messing Gun [GDC, India]
6. Root Canal Pluggers [GDC, India]
7. Coaxial Wire [GDC, India]


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CD4 Cell Counts, Lipid Profile, and Oral Manifestations in HIV-Infected and AIDS Patients

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Article Info	ABSTRACT
<p>Article type: Original Article</p> <hr/> <p>Article History: Received: 15 March 2019 Accepted: 1 October 2019 Published: 20 December 2019</p> <hr/> <p>* Corresponding author: Department of Oral and Maxillofacial Medicine and Radiology, Saraswati Dhanwantari Dental College and Hospital and Post-Graduate Research Institute, Parbhani, Maharashtra, India</p> <p>Email: singhabhishekndls@gmail.com</p>	<p>Objectives: The present study aimed to evaluate CD4 cell counts, lipid profile, and oral manifestations in human immunodeficiency virus (HIV)-infected and acquired immune deficiency syndrome (AIDS) patients and their correlation with seronegative controls.</p> <p>Materials and Methods: In this cross-sectional, hospital-based study, there were three groups of subjects: group A consisting of 500 healthy patients (controls), group B composed of 500 HIV-infected patients, and group C comprised of 500 AIDS patients based on their CD4 cell counts. CD4 cell counts were assessed using the CyFlow counter. Lipid profile was evaluated with the Erba EM 360 analyzer.</p> <p>Results: The results were statistically significant for CD4 cell counts ($P < 0.001$). The levels of total cholesterol (TC) and low-density lipoproteins (LDLs) were significantly decreased while triglycerides (TGs) and very-low-density lipoproteins (VLDLs) were significantly increased in AIDS patients compared to the controls and HIV-infected patients. Various results were obtained regarding oral manifestations with different levels of significance.</p> <p>Conclusion: CD4 cell counts, TC, LDLs, TGs, and VLDLs were significantly changed in HIV-infected and AIDS patients compared to the controls.</p> <p>Keywords: CD4 Cell Counts; Lipids; Oral Manifestations; HIV Infections; Acquired Immunodeficiency Syndrome</p>
<p>➤ Cite this article as: Sridevi K, Malathi S, Chalapathi KV, Chowdary GN, Gayathri M, Eswar Chand G, Nayyar AS. CD4 Cell Counts, Lipid Profile, and Oral Manifestations in HIV-Infected and AIDS Patients. <i>Front Dent.</i> 2019;16(6):436-449. doi: 10.18502/fid.v16i6.3443</p>	

INTRODUCTION

Acquired immunodeficiency syndrome (AIDS) is caused by a retrovirus called human immunodeficiency virus (HIV), which impairs the body's immune system and leaves the patient

susceptible to life-threatening opportunistic infections, neurological disorders, and malignancies [1]. The two known forms of this virus are HIV-1 and HIV-2 from a family of lentiviruses [2]. HIV is a spherical virus enveloped

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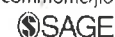


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Correlation of Infrazygomatic Bone Thickness With Cervical Vertebrae Maturation Stages

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Abstract

Anchorage is one of the most important consideration in the field of orthodontics to achieve a desired tooth movement. In order to eliminate the undesirable side effects such as anchorage loss, skeletal anchorage systems such as mini-implants have been introduced in orthodontics.

Aim: To evaluate the bone thickness of the infrazygomatic crest in different cervical vertebrae maturation index (CVMI) and to compare it between male and female subjects, by using cone beam computerized tomography (CBCT) imaging.

Materials and Methods: A retrospective study was conducted using CBCT images of 60 patients in the age group of 8–25 years. Cervical vertebra maturation was analyzed using Hassel–Farmann index and divided into 6 groups (n = 10/group). The infrazygomatic crest was divided into horizontal and vertical planes. The horizontal plane passed through the most inferior border of the zygomatic process of maxilla and the vertical plane passed through the most anterior point of the infratemporal fossa parallel to midsagittal plane. Five parallel lines were drawn at 2 mm interval in both horizontal and vertical planes (HB+2, HB+4, HB+6, HB+8, and HB+10) (V-2, V-4, V-6, V-8, and V-10). The bone thickness was measured at the point of intersection of these lines.

Results: According to Kruskal–Wallis analysis, statistically significant difference in infrazygomatic crest (IZC) bone thickness was seen in various CVMI stages (P = .001). Maximum bone thickness was 11 mm and minimum bone thickness was 1 mm. No significant difference was observed between male and female populations.

Conclusion: Thus, the superolateral area in infrazygomatic crest is the most appropriate site for miniscrew insertion in all age groups.

Keywords

Infrazygomatic bone, cervical vertebrae maturation, bone thickness, miniscrews

Introduction

Anchorage in orthodontics has been an important consideration since the start of the millennium. Conventional anchorage uses intraoral and extra oral methods like headgear and intermaxillary elastics to reinforce anchorage. Nowadays, cortical anchorage has replaced conventional techniques since it provides increased anchorage control with least patient compliance. Temporary anchorage devices such as miniscrews, mini-implants, miniplates are used extensively because of the smaller size, cost effectiveness, and ease of application.^{1,2} Many factors such as implant design, torque, patient age, bone thickness, adequate mechanical properties of the screws, material used, and type and length of active loading³⁻⁶ have determined the primary stability of the

miniscrews. Safe zones for placement of miniscrews are being extensively studied⁷⁻¹⁰ in order to prevent the risk of injuring the roots of the teeth and to decrease mucosal irritation. Many methods such as use of insertion guides and^{11,12} assessment of bone thickness with computed

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- Mandible is the only mobile facial Clinical Paper
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Application of Anatomically Designed 2-Dimensional V Plate in Management of Mandible Fracture: A Pilot Study

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Abstract

jaw bone and it aides in various functions such as phonation and mastication. Therefore, management of mandible fracture becomes inevitable due to its functional and anatomical importance. Fracture fixation methods and techniques have steadily evolved with various osteosynthesis systems. In this article, we discuss the management of mandible fracture using a newly designed two-dimensional (2D) hybrid V-shaped plate.

Purpose

In this paper, we have evaluated the efficacy of the newly developed 2D V-shaped locking plate in the management of mandibular fractures.

Method

We have assessed 12 cases of different mandibular fractures ranging from symphysis, parasymphysis, angle and subcondylar region. Treatment outcome was assessed both clinically and radiologically at regular intervals with various intraoperative and postoperative parameters.

Result

Results of this study suggest that fixation of mandible fracture with the 2D hybrid V-shaped plate facilitates anatomic reduction and functional stability and carries a low morbidity and infection rate.

Conclusion

The 2D anatomic hybrid V-shaped plate can be a suitable alternative to conventional 2D and 3D plates as it offers satisfactory anatomic reduction and functional stability. Positioning the plate in relation to the mental nerve and plate adaptation along the angle region are much easier.





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Case Report

Diagnostic Approach of Juvenile Aggressive Fibromatosis of Mandible

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ABSTRACT

Spindle cell lesions are diverse group of heterogeneous disorders affecting the oral cavity and consisting of predominantly spindle-shaped cells in histopathology. It can be either epithelial, mesenchymal or odontogenic in origin and hence the diagnosis of a spindle cell lesion is always challenging. Here, we report a case of a four year old male child who reported to the outpatient department with a chief complaint of pain and swelling in the left side of the jaw with restricted mouth opening for the past two months. Based on the clinical and radiographic features, provisional diagnosis as Odontogenic tumor and Central giant cell granuloma was given. Histopathological and immunohistochemical findings helped us to arrive at a final diagnosis of "Aggressive fibromatosis", a spindle cell neoplasm of mesenchymal origin. As this lesion has been reported with a high rate of recurrence, it is very crucial to give a definitive diagnosis, and in our case immunohistochemistry served as an adjunct to routine Hematoxylin and Eosin staining in the final reporting.

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1. Introduction

Aggressive fibromatosis is a benign spindle cell tumor which is designated by various names in the literature such as desmoid tumor, non-metastasizing fibrosarcoma and grade I fibrosarcoma [1,2]. The names non-metastasizing fibrosarcoma and grade I fibrosarcoma were synonymously removed from usage as it designates sarcomas which has a metastatic potential [2]. A widely used terminology in the literature for aggressive fibromatosis was desmoid tumor, coined by Mueller in 1838 to emphasize the band like or tendon like consistency of the lesion [2]. Fibromatosis includes an extensive group of benign fibrous connective tissue proliferations with similar microscopic appearance, the biological behaviour of which is intermediate between benign fibrous lesions and fibrosarcoma [2]. Aggressive fibromatosis of head and neck is uncommon and lesions involving oral cavity and jaw bones are encountered rarely [3]. It is characterized by a locally infiltrative growth potential without metastasis and a remarkably high tendency to recur [3]. Hence, diagnosing this lesion is very crucial and

requires a thorough knowledge. This article reports a case of aggressive fibromatosis involving the left side of the mandible in a 4 year old male child which was treated with complete surgical excision.

2. Case report

A four year old male child reported to the outpatient department of our institution with a chief complaint of pain and swelling in the left side of face for the past two months. The patient gave a history that the swelling was sudden in onset which gradually progressed to attain the present size. The pain was insidious in onset, intermittent in nature and throbbing type. The patient also complained of inability to open the mouth completely. Patient had visited a dental clinic for the same complaint two weeks back and was advised medications with antibiotics and analgesics. On examination, a diffuse single swelling was seen involving the angle, ramus and lower border of the mandible which was hard, measuring approximately 4 × 4 cms in size with restricted mouth opening (17 mm) along with deviation of mandible to the right side (Fig. 1A). Intraoral examination revealed a mild obliteration of the mandibular left buccal vestibule from 74 region to the retromolar area. No other abnormalities were detected intraorally (Fig. 1B) and on palpation, the swelling was tender and hard in consistency.

Panoramic radiograph (OPG) revealed an irregular radiolucency with ill-defined margins involving left angle and ramus region of

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Case Report

Recurrence of Aneurysmal Bone Cyst of the Mandible and Its Management: A Case Report and Overview

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Abstract

Aneurysmal bone cyst (ABC) was first described by Jaffe and Lichtenstein in 1942 characterized by the blow out of the bone seen in radiograph. 12% of the patients had a lesion in the head and neck region, of which only 2% of these pathologies occur in the maxillofacial region. It is most common in those regions of the skeleton where there is a relatively high venous pressure and high marrow content. Mandibular and maxillary molar regions are most commonly involved followed by angle and ascending ramus with preponderance of female patients. In the present case, a 52-year-old female reported to our institute with the chief complaint of swelling. Clinically and correlating radiographically, a large lesion measuring 6 cm × 2.5 cm approximately was involved occupying half of the mandible. This article describes the clinical, radiographical, and histopathological picture, differential diagnosis, and the management of a recurrence of large ABC of the mandible.

Keywords: Aneurysmal bone cyst, mandible, reactive lesion, recurrence, segmental resection

INTRODUCTION

Aneurysmal bone cyst (ABC) is a riveting benign reactive lesion of the bone rather than a true neoplasm. This unique lesion was separated as a distinct entity by Jaffe and Lichtenstein in 1942, and the term ABC for this pathology was given describing the characteristics blow out as seen in radiographs.^[1] It is most commonly located in long bones and vertebra and very rarely in the craniomaxillofacial region. The etiology of this lesion is still uncertain and controversial. In the head and neck region, it is more frequently reported in the mandible than the maxilla in the ratio of 3:1, with preponderance for the body, ramus, and angle of the mandible.^[2] Often they are mistaken for other common lesions in the maxillofacial region due to their similar clinical and radiological appearance. ABC can be classified into three types. Conventional or vascular type manifests as a rapidly growing, expansive, destructive lesion causing cortical perforation and soft tissue invasion. The solid type may present as a small asymptomatic lesion first noticed as radiolucency on a routine radiograph or as a small swelling. A third form or mixed variant demonstrates features of both the vascular and

solid types. It may be a transitory phase of the lesion because sudden activation or rapid enlargement of stable lesions has been reported.^[3] An extensive study was undertaken to test the hypothesis that an ABC is a secondary phenomenon that occurs in a primary lesion of the bone. The purpose of this article is to report a rare case of the recurrence of ABC in a 45-year-old female affecting the body of the mandible and its management.

CASE REPORT

A 52-year-old female patient reported to hospital with chief complaint of pain in the mandibular right-sided molar region for the past one year. The patient's previous treatment reports suggest that she underwent curettage as a primary surgical treatment for the lesion in the private hospital with histopathological report giving diagnosis as ABC. On examination, slight asymmetry was apparent on the right side of the face. Intraoral examination revealed obliteration of the

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Non Syndromic Multiple Odontogenic Keratocysts In Mandible: A Case Report

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ABSTRACT

Background: In the literature, odontogenic keratocysts are very well recorded. OKCs may occur either as solitary (non-syndromic OKCs) or as multiple OKCs (syndromic OKCs) in two different types. Multiple OKCs usually occur as one of the features in Gorlin–Goltz syndrome. Multiple OKCs, though extremely rare, have been known to occur in non-syndromic situations. We report a rare case of numerous OKCs without associated with any syndromes. We address the probability of the present case being a partial expression of NBCCS and examine briefly the latest trends in the treatment of recurrent OKCs associated with this syndrome.

Keywords: Odontogenic Keratocyst, NBCC Syndrome, Enucleation.

INTRODUCTION

The cystic lesion that usually affects the oral and maxillofacial region is Odontogenic Keratocyst (OKC).¹ The lesions are arising from the dental lamina or its remains and are clinically aggressive lesions with a high risk of recurrence.² OKC appears to invade surrounding tissues like the bone.³ World Health Organization (WHO) classified OKC into two types, viz. the parakeratinized OKC and orthokeratinized OKC. These two groups were nevertheless listed as separate entities in 2005, mainly due to the differences in their ability to recur. The parakeratinized form was categorized under the branch of odontogenic epithelial tumours as a "Keratocystic odontogenic tumour" (KCOT). The orthokeratinized form has been identified as an orthokeratinized odontogenic cyst (OOC) within the odontogenic developmental cyst entity. KCOTs were reclassified as OKCs again, but are still diagnostically distinctive from OOCs according to the newest WHO classification from 2017. One of the reasons why the word OKC was reintroduced by the WHO was because PTCH1 gene mutations were observed in other developmental cysts and another

explanation was that marsupialization is a successful treatment procedure for OKC and may be correlated with the return of the epithelium to normal, with lower recurrence levels which are not characteristic of neoplasms.⁴⁻⁶

Multiple OKCs are also associated with nevoid basal cell carcinoma syndrome (NBCCS). Various systems show evidence of abnormal changes in NBCCS comprising of the stomatologic system, skeletal system, ectopic calcification of the central nervous system (CNS), ocular system, genitor-urinary system, mesenteric cysts, skin, genitourinary system and cardiovascular system.⁷ This study reports the case of multiple OKCs with no syndromic manifestations.

CASE REPORT

A 35-year-old male patient reported to Ray's Implant and Dental Clinic, Chrompet, Chennai, India, with a chief complaint of pus discharge from the left lower jaw region for the past 6 months. Extra-orally,

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Residual Cyst – A Misleading Diagnosis with Clinico Pathological Presentation

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Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

Residual cysts are uncommon odontogenic cyst, which occurs as a result of incomplete surgical removal of any odontogenic cyst. It is a type of inflammatory odontogenic cyst, in which the tooth is extracted with a periapical pathological area left behind in the bone that leads to the formation of a residual cyst. They are usually asymptomatic in nature and its clinical, radiographic and histopathological features are similar to that of radicular cyst.

Key words: Anterior maxilla, apicectomy, extraction, radicular cyst, residual cyst, surgical removal,trauma.

Introduction:

A cyst is defined as a pathological cavity, having fluid, semi-fluid or gaseous contents and which is not created by accumulation of pus (Kramer, 1974). Most of the jaw cysts are epithelial lined cysts and usually derived from odontogenic apparatus and remnants.¹ Radicular cyst is the most common inflammatory odontogenic cyst that

develops from the epithelial remnants which are stimulated by an inflammatory process originating most commonly from a non-vital tooth.²

When the periapical inflammatory lesion is not removed or excised completely along with the infected teeth, then the periapical lesion remains within the jaw bone as residual cyst.³ The residual cyst can also arise from the necrotic pulp of an extracted teeth and also from the remnants of the epithelium which proliferates by an inflammatory process which is no longer present. In some cases, these residual cysts are diagnosed as an incidental finding during a routine oral examination.

Here we report a case of residual cyst in a 28-year-old female patient with a recurrent pus discharge from maxillary anterior teeth which was previously treated by apicectomy.

Case Report

A 28-year-old female patient reported to a private clinic with a chief complaint of recurrent pus discharge from



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ACADEMIC YEAR 2016-17

A study on total intravenous anesthesia in orthognathic surgical procedures

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ABSTRACT

Aims and Objective: To assess the use of propofol for induction and maintenance of anaesthesia among patients undergoing various combinations of orthognathic surgical procedures.

Materials and Methods: Following Preoperative evaluation, patients were given Fentanyl (2 micrograms/kg) intravenously. Induction (2 mg/kg) and maintenance (10 mg/kg/hr) of anaesthesia was achieved by Propofol infusion, Blood Pressure and heart rate were maintained at >70 or 80 mm Hg and >50 respectively and were monitored continuously. Infusion was stopped approximately 30 to 40 minutes before the end of surgery. Immediate recovery recorded and was assessed. **Results:** The average duration of anaesthesia and surgery were found to be 4 hrs 28 min (SD= 1 hr. 35 min) and 4 hrs 3 min (SD=1 hr 38 min). None of the patients experienced pain on injection of induction agent. No significant change was observed in the mean heart rate and mean BP at different time intervals from baseline value to 30 minutes after the recovery. The average time taken to obey simple commands after stopping Propofol infusion was 42.60 ± 9.09 min. Time taken for spontaneous eye opening, full orientation and to count backwards was 43.45 ± 9.11, 47.85 ± 8.18 and 50.9 ± 9.14 respectively. Face-Hand test performed at 15 min after extubation was positive in all the patients. The mean Aldrete score at 15 min after extubation was 11.65 ± 0.75. The mean value of unaided sitting time for at least 2 min was after 119.00 ± 20.56 min. The average score of picture card test, time taken in "picking up matches" test, Ball bearing test, time taken to walk and to void urine were 5.80 ± 1.47, 67.95 ± 5.72, 9.80 ± 2.57, 172.75 ± 39.25 and 163.75 ± 55.96 respectively. Ninety percent of the patients were amenable for a repeat of this anaesthetic using the same regime but 10% of them did not answer anything. Seven patients (35%) had chills post-operatively. **Conclusion:** Propofol is an excellent anaesthetic for day care procedures.

Key words: Anesthesia, intravenous anesthesia, orthognathic surgery, propofol, sedation

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INTRODUCTION

Orthognathic surgical procedures have traditionally been done on in-patient setting. The reason for in-patient management varies but includes anesthetic

management, potential blood loss, and a greater length of operation. As orthognathic surgical procedures have evolved, several aspects of management of

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Morphometric study on mandibular foramen and incidence of accessory mandibular foramen in mandibles of south Indian population and its clinical implications in inferior alveolar nerve block

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Abstract: The mandibular foramen is a landmark for procedures like inferior alveolar nerve block, mandibular implant treatment, and mandibular osteotomies. The present study was aimed to identify the precise location of the mandibular foramen and the incidence of accessory mandibular foramen in dry adult mandibles of South Indian population. The distance of mandibular foramen from the anterior border of the ramus, posterior border of the ramus, mandibular notch, base of the mandible, third molar, and apex of retromolar trigone was measured with a vernier caliper in 204 mandibles. The mean distance of mandibular foramen from the anterior border of ramus of mandible was 17.11 ± 2.74 mm on the right side and 17.41 ± 3.05 mm on the left side, from posterior border was 10.47 ± 2.11 mm on the right side and 9.68 ± 2.03 mm on the left side, from mandibular notch was 21.74 ± 2.74 mm on the right side and 21.92 ± 3.33 mm on the left side, from the base of the ramus was 22.33 ± 3.32 mm on the right side and 25.35 ± 4.5 mm on the left side, from the third molar tooth was 22.84 ± 3.94 mm on the right side and 23.23 ± 4.21 mm on the left side, from the apex of retromolar trigone was 12.27 ± 12.13 mm on the right side and 12.13 ± 2.35 mm on the left side. Accessory mandibular foramen was present in 32.36% of mandibles. Knowledge of location mandibular foramen is useful to the maxillofacial surgeons, oncologists and radiologists.

Key words: Mandible, Mandibular foramen, Mandibular notch, Accessory Mandibular foramen, Inferior alveolar nerve block

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Introduction

The mandibular foramen (MF) is an irregular foramen located a little above the centre of the medial surface of the

mandibular ramus. The inferior alveolar nerve and vessels pass through the MF and traverse the mandibular canal and divides into mental and incisive branches to supply the mandibular teeth and participates in the formation of the anterior loop [1, 2]. Inferior alveolar nerve block is a common local anaesthetic technique used in dental practice. But the failure rate of this technique is reported to be as high as 20%–25% [3]. The commonest cause for inferior alveolar nerve block failure is inaccurate localization of MF [4]. The main complications during this technique are haemorrhage, injury to the neurovascular bundle, fractures, and necrosis of mandibular ramus

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Mucocele: A diagnostic dilemma!!

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Abstract

Oral mucocele is the most common benign lesion of minor salivary gland caused due to any form of mechanical trauma to the excretory duct of the gland. It is of two types – mucous extravasation phenomenon and mucous retention type. Extravasation type is more common. Here, we report a case of a 65-year-old male patient with a complaint of painful swelling in the lower lip for 1 month with a history of trauma in the lower lip. It was clinically diagnosed as traumatic fibroma, and an excisional biopsy was done. However, the histopathology was basically that of mucous extravasation phenomenon coexisting with the features of a reactive lesion implicating the potential role of chronic irritation in the impairment of normal healing process. Considering the fact that long-standing chronic inflammation in a benign lesion can even lead to malignant transformation of that lesion; here, we highlight the role of a good clinicopathologic correlation and the significance of prompt intervention and treatment. Furthermore, emphasizing the potential need for postoperative follow-up by the dentist, how much ever trivial the lesion may appear to be in the best interest of the patient.

KEY WORDS: Chronic irritation, clinicopathologic correlation, malignant transformation, mucocele

Mucocele is a common salivary gland lesion that results from mucous accumulation. It occurs most commonly in the lower lips as it is trauma-prone due to its anatomical location clinically, it may be due to extravasation phenomenon or mucous retention cyst. Because each has its own distinctive pathogenesis and microscopic features, they are considered separately. Trauma is the most common cause of mucous extravasation phenomenon which leads to severance of the salivary duct and spillage of the mucin into the adjoining connective tissue.[1]

The spillage of mucin into the connective tissue in turn initiates an inflammatory reaction leading to the formation of a connective tissue wall made of granulation tissue, an attempt to contain the mucin and prevent its spillage. As mucin pooling occurs beyond the confinement of the salivary duct, it is not lined by epithelium, thus it is considered as a pseudocyst. These reactions to the spilled mucin have been described to be taking place in three evolutionary phases.[2,3] The common treatment modality varies from simple surgical excision to micromarsupialization, cryosurgery, steroid injections, CO₂ laser, etc.[4]

Management of gingival recession with acellular dermal matrix graft: A clinical study

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ABSTRACT

Aims and Objectives: Obtaining root coverage has become an important part of periodontal therapy. The aims of this study are to evaluate the clinical efficacy of acellular dermal matrix graft in the coverage of denuded roots and also to examine the change in the width of keratinized gingiva. **Materials and Methods:** A total of 20 sites with more than or equal to 2 mm of recession depth were taken into the study, for treatment with acellular dermal matrix graft. The clinical parameters such as recession depth, recession width, width of keratinized gingiva, probing pocket depth (PD), and clinical attachment level (CAL) were measured at the baseline, 8th week, and at the end of the study (16th week). The defects were treated with a coronally positioned pedicle graft combined with acellular dermal matrix graft. **Results:** Out of 20 sites treated with acellular dermal matrix graft, seven sites showed complete root coverage (100%), and the mean root coverage obtained was 73.39%. There was a statistically significant reduction in recession depth, recession width, and probing PD. There was also a statistically significant increase in width of keratinized gingiva and also gain in CAL. The postoperative results were both clinically and statistically significant ($P < 0.0001$). **Conclusion:** The results of this study were esthetically acceptable to the patients and clinically acceptable in all cases. From this study, it may be concluded that acellular dermal matrix graft is an excellent substitute for autogenous graft in coverage of denuded roots.

KEY WORDS: Acellular dermal matrix graft, recession, root coverage

Gingival recession is defined as the exposure of root surfaces due to the apical migration of the gingival margin.^[1] The search for the perfect root coverage technique has taken many differing approaches. While several mucogingival surgical procedures have been proved successful and predictable, commonly used in day to day practice are pedicle soft tissue graft and free soft tissue graft procedures. It has been reported that with excellent esthetics, predictability, and genetic predisposition, sub-epithelial connective tissue graft is considered as the gold standard in grafting procedures. Since they are harvested from the palate, an additional surgery is needed, which will be painful during healing and the amount of donor material that was necessary limited the number of teeth that could be treated with a single surgery.

These limitations led to search of alternate methods for root coverage. Klingsberg^[2] used preserved sclera for the coverage

of denuded roots. Schoo and Coppes^[3] and Bartolucci^[4] tried duramater and obtained gain in the width of attached gingiva and coverage of denuded roots. The usage of allogenic freeze-dried skin (FDS) graft for mucogingival problems and as a substitute for gingival autografts was reported in 1977. In the early 1980's, Mishkin *et al.*^[5] reported the first case on the histologic study of FDS allograft in oral cavity.

Since these grafts contained antigens that could cause an immune or inflammatory response and also scarring while healing, acellular dermal matrix graft (ALLODERM[®]) has been introduced as a substitute for soft tissue grafts. Hence, there is an abundant supply of graft material without resorting to palatal donor site. Alloderm is obtained by processing the demis of the human donors, where the cells are removed,

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Classification of odontogenic cysts and tumors – Antecedents

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Abstract Pierre Paul Broca produced a monograph on tumor classification which also included the classification of odontogenic tumors (OTs). The terminology used to describe malignant epithelial OTs has varied since the World Health Organization published the initial consensus on the taxonomy of OTs. Minor changes were introduced in the second edition. It is only in the very recent years that additional knowledge has accumulated and refined the classification. This review emphasizes on reasons for modification by each author and the recent acceptance.

Key Words: Cysts, keratinizing cystic odontogenic tumor, odontogenic tumors, odontoma

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INTRODUCTION

Odontogenic tumors (OTs) are lesions derived from epithelial, ectomesenchymal or both the elements that have been part of the tooth-forming apparatus.^[1,2] Odontogenic cysts are the most common type of cysts occurring within the jaws. They arise as a result of proliferation and cystic degeneration of odontogenic epithelial rests.^[3]

The first attempt to classify odontogenic cysts and tumors was published by Broca in 1868. Following which numerous works have been done. It was not until the 1960's when a group of experts from different countries, sponsored by the World Health Organization (WHO), produced a consensus-based classification aimed to define the clinicopathological criteria necessary to diagnose these entities. These efforts in 1971 led to the publication of the first edition of the "histological classification of

OTs, jaw cysts and allied lesions," which had professors Jens J. Pindborg and Ivor R.H. Kramer as editors.^[4] The classification was based on the concept suggested in 1958 that characteristic interactions between epithelial and ectomesenchymal tissue elements occurring during normal tooth development also operate to a certain extent in the pathogenesis and histodifferentiation of OTs.^[4,5]

PREVALENCE OF ODONTOGENIC LESIONS

OTs and cyst are uncommon lesions accounting for <2–3% of all oral and maxillofacial specimens sent for diagnosis to oral pathology services. If viewed as a percentage of all tumors in the human body, this figure is reduced to a conservative estimate of approximately 0.002–0.003%. More than 95% of all OTs reported in large series are benign and around 75% are represented by odontomas, ameloblastomas and myxomas.^[1]

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Case Reports J Clin Orthod. 2016 Jun;50(6):368-71.

Mini-Implant-Supported Orthodontic Extrusion and Restorative Treatment of Fractured Teeth

Nivedita Kini ¹, Santosh Kumar ², Jatinder Mohan ³, Mohammed Saad Shaikh ⁴, Divya Maheshwari ⁵

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Case Report

Recurrent keratocystic odontogenic tumor of right maxillary sinus involving the right infraorbital rim

ABSTRACT

Keratocystic odontogenic tumor (KCOT) is a benign odontogenic tumor with an aggressive behavior and high recurrence rate. The most common site of predilection is the posterior mandible. In contrast, KCOTs occurring in the maxillary region are relatively rare. However, the maxillary involvement poses a greater and increased threat, due to proximity to vital structures such as maxillary sinus, orbital floor, and infratemporal fossa. This report presents such a case of KCOT involving the maxillary sinus eroding the floor of the orbit and provides an account of the factors that need to be considered during management.

Keywords: Infraorbital rim, keratocystic odontogenic tumor, maxilla, maxillary sinus

INTRODUCTION

The term “odontogenic keratocyst (OKC)” was coined by Philipsen in 1956. Owing to its locally aggressive behavior and higher tendency of recurrence, the World Health Organization in the year 2005 has renamed it to keratocystic odontogenic tumor (KCOT) rather than a cyst.^[1]

KCOT shows a bimodal age distribution with its first peak in the second and third decade and the second peak in the fifth and sixth decade of life.^[2] It is more commonly seen in males with a M:F ratio of 1.3:1^[3] and has an increased site predilection for the posterior body and ramus of the mandible, with the maxillary involvement being very rare (<1%).^[4] Diagnosis of KCOT is confirmed by histopathology though radiographic features may be suggestive of it.

A wide array of treatment modalities is available from marsupialization to enucleation, primary closure, packing open with adjuvant therapy such as cryotherapy or carmoy's solution, marginal or radical resection. However, the success of the treatment depends mainly upon the site involved, size of the lesion, the proximity of the vital structures, and appropriate surgical procedure with a regular clinical follow-up.^[5]

Here, we present a rare case of KCOT involving the anterior maxilla and the right maxillary sinus with perforation of the infraorbital rim, and the orbital floor emphasizes the importance of interdisciplinary cooperation involved in customization of the treatment protocol intraoperatively to preserve the form and function of vital structures

CASE REPORT

A 45-year-old female patient reported to the outpatient Department of Oral and Maxillofacial Surgery, Adhiparasakthi Dental College and Hospital, with a chief complaint of painless swelling on the right side of the face for the past

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Evaluation of Micronutrient (Zinc, Magnesium, and Copper) Levels in Serum and Glycemic Status after Nonsurgical Periodontal Therapy in Type 2 Diabetic Patients with Chronic Periodontitis

Abstract

Aims and Objectives: To find out the effect of nonsurgical periodontal therapy on serum zinc (Zn), magnesium (Mg), and copper (Cu) concentration and glycemic status in type 2 diabetes with chronic periodontitis (CP). **Materials and Methods:** One hundred and twenty patients were included in this study, which was further divided into three groups. Group 1 consisted of forty patients with CP. Group 2 consisted of forty patients of CP with controlled diabetes, and Group 3 consisted of forty patients of CP with uncontrolled diabetes. Periodontal parameters such as plaque index, gingival index, bleeding on probing, pocket depth, and clinical attachment levels (CALs) were evaluated. Blood samples were collected to assess the levels of fasting blood sugar, glycosylated hemoglobin, Zn, Mg, and Cu. All parameters were evaluated at baseline and 3 months after nonsurgical periodontal therapy. **Results:** The results showed statistically significant reduction in all the clinical parameters within the groups except for the CAL in group 1 patients ($P = 0.05$). The glycemic status also showed a statistically significant reduction after treatment ($P < 0.001$). The intragroup comparison was taken between the values of micronutrients, showed substantial increase in the levels of both Zn and Mg and decrease in the level of Cu after nonsurgical periodontal treatment ($P < 0.001$). **Conclusion:** Patients with diabetes and periodontitis had altered metabolism of Zn, Mg, and Cu contributing to the progression and complication of diabetes mellitus and periodontitis. Nonsurgical periodontal treatment improved the variation and concentration of plasma micronutrients and also the periodontal status and glycemic level.

Keywords: Chronic generalized periodontitis, glycosylated hemoglobin, micronutrients, type 2 diabetes mellitus

Introduction

Periodontitis is a multifactorial disease caused by Gram-negative anaerobic bacteria along with systemic and environmental factors. Additional factors contributing to this multifaceted local disease process include a number of systemic diseases, especially diabetes that can exaggerate the host response to the local microbial factors.^[1] Diabetes and periodontal disease share a bidirectional relationship. Diabetes influences the progression of periodontitis, and it is considered as the sixth major complication of diabetes.^[2] Poor glycemic control leads to worsened periodontal condition and vice versa. Nonsurgical therapy of periodontal disease has shown to improve the glycemic status of diabetic individuals.

Micronutrients play a role in both diabetes and periodontal disease. The vitality of

the periodontal tissues in both health and disease depends on the adequate source of essential nutrients being available to the host. The effect of nutrition on the immune system and its role in periodontal disease have been reviewed by many authors.^[3] Periodontitis can attribute to the variation and concentration of plasma micronutrients.^[4] Similarly, numerous studies have found alterations in micronutrient status of patients with diabetes mellitus (DM) and the deficiency of certain minerals or vitamins has been correlated with the presence of diabetic complications. The daily diet consists of both micronutrients and macronutrients. The micronutrients are required in milligram (mg) to microgram (μg) quantity and include vitamins and minerals. Recommended daily requirement of micronutrient such as iron, copper (Cu), and zinc (Zn) is <100 (μg). These

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RESEARCH ARTICLE

Awareness among Patients regarding Dental Implants as a Treatment Option for replacing Missing Teeth in Melmaruvathur Population

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ABSTRACT

Background: Treatment with dental implants has become increasingly important in the range of prosthodontic treatment. Significant improvements in oral rehabilitation particularly in edentulous individuals have been seen. In Adhiparasakthi Dental College, Melmaruvathur, a survey was made to evaluate awareness among patients for dental implants, their level of knowledge, and attitude toward replacement of missing teeth by dental implants.

Materials and methods: A survey of 480 people was conducted through a printed questionnaire and completed by willing respondents. The questionnaires were prepared in English and Tamil language to enable better understanding and completion.

Results: Of the 510 people surveyed, 480 responses were retrieved, of which 331 were aware of dental implant treatment in Melmaruvathur, Tamil Nadu. Among them, 304 respondents were aware that implants could be used for replacement of missing teeth. Most of the respondents stated that dental implants were placed in the jawbone, followed by gums. Only 41% respondents assumed that implants last for a lifetime and only 35% of respondents believe that poor oral hygiene was the most common cause of implant failure.

Conclusion: More dental education programs are needed to improve understanding of the importance of restoration of missing teeth. General implant awareness levels are satisfactory. However, increased awareness of patients for restoration of missing tooth with dental implants is necessary. Dental education programs with special emphasis on advantages, treatment, maintenance, and postoperative care of dental implant therapy are needed. More than two-thirds of the surveyed population is interested in knowing about and being treated with dental implants.

Keywords: Awareness, Dental implants, Melmaruvathur, Survey, Treatment.

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INTRODUCTION

The aim of today's dentistry is to restore the patient to normal function, speech, esthetics, and health. Dental implants were originally used for treatment of edentulous patients and are associated with improved denture retention, stability, and functional efficiency. Due to the high success rates and predictability of dental implants, their prevalence in the rehabilitation of partially dentate and edentulous patients is increasing year by year. Advantages of implant-supported restorations include psychological benefits and tooth structure conservation adjacent to the teeth to be replaced. The overall desire for better oral health-related quality of life has become a reality in prosthetic dentistry.¹

According to Pommer et al,² in Austria, there was, over the course of 5 years, a dramatic escalation in interest of implant treatment. At the time of the second survey (2008), 79% of participants expressed desire for implant treatment in comparison with 56% in the first survey (2003).

The number of dental implants inserted annually worldwide has been estimated to be close to 1 million. However, the level of information available to patients about realistic, evidence-based treatment options with implants is often only fragmentary, and what is disseminated by the media and industry does not always reflect evidence-based data.³⁻⁵

For professionals, it is vital to assess a patient's level of knowledge with regard to dental implants and whether their perception of dental implants does in fact reflect reality, thus, alleviating the negative image of implant dentists due to miscommunication and patient discontent.

A questionnaire survey from a representative sample of the general Melmaruvathur population is therefore needed to assess public awareness and understanding of dental implants:

AIMS AND OBJECTIVES

- To evaluate the awareness among patients for dental implant therapy.
- To evaluate the level of knowledge among the population with regard to dental implant therapy.

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Review Article

Tools for Expert Witnesses in Dentistry: An Overview

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ABSTRACT

The Inter disciplinary knowledge of forensic dentistry and the modern Day investigation plays a small but important role in enforcing justice in civil and criminal cases. Forensic odontologists are the expertise who help to identify the unrecognizable human remains following a mass disaster with the preserved structures of the oral environment. Thus this article describes the various aspects of forensic odontology in the current scenario.

KEY WORDS: Amelogyphics, cheiloscopy, denture ID tag, dermatoglyphics, virtual autopsy

INTRODUCTION

The word "Forensis" is a Latin word which means "forum." In Rome, forum is a meeting place where civil and legal matters are discussed before the public. Forensic science refers to the pursuit of truth and is a fact finding mission, which is accepted by the scientific community and the judicial system. Forensic medicine includes forensic pathology, forensic clinical medicine, toxicology, thanatology, forensic medical ethics, etiquette, jurisprudence, psychiatry, forensic odontology, anthropology, entomology, and serology.

Forensic dentistry is defined as that "branch of dentistry which, in the interest of justice, deals with the proper handling, and examination of dental evidence and with the proper evaluation and presentation of dental findings" (Paul Revere - first forensic dentist).

Forum - "court of law;" Odontology - "study of teeth."

Dr. Oscar Amoedo is considered as "the father of Forensic Odontology."

Forensic odontology is the application of dental and the associated knowledge used to identify the victims of any civil or criminal issues that are decomposed, mutilated and are visually unrecognizable of the human remains following the natural or accidental or intentional mass massacres and disasters.

Theory behind forensic dentistry is that, each individual is unique and no two mouths are alike and they leave recognizable marks. This concept plays an important role in the dental identification, age estimation, gender determination, blood group determination, cheiloscopy, rugoscopy, dermatoglyphics, bite mark analysis, denture labeling, and DNA typing.

DENTAL IDENTIFICATION

It is the establishment of recognition of an individual with the morphology and arrangement of the teeth among the races. Teeth are the hardest and chemically stable structure, which are highly resistant to various kinds of insults like high temperature and acids. It is mostly kept safe even after death.

Dental identification procedure is done during mass disasters when skeletal remains are charred and decomposed. This includes comparative identification and reconstructive profiling.^[1]

Comparative identification is done when the ante-mortem records are available and are used to compare with oral autopsy and postmortem remains. The various kinds of dental restorations present in the victims oral cavity suggests the socio economic and racial background of the victim. The wear pattern and staining of teeth suggests occupational and the habits of the victim.-

Profiling is done when the ante-mortem records are not available and when attempts are made to identify the age and sex to a probable identification.

ADVANCEMENT IN DENTAL IDENTIFICATION

THE SELFIE PHOTOGRAPHS

The selfie photographs are more common among men with advancement in electronic, telecommunication, and social network. Hence, this can also be considered one of the tool for human identification. The smile line and superimposition of the images can be used as an ante mortem record when

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Repair of Gingival Defect Caused By Double Frenal Attachment In Mandibular Central Incisor – A Case Report

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Abstract: Gingival recession has been defined as the apical migration of the marginal gingiva that may be commonly associated with aberrant or high frenal attachment, improper brushing techniques and leads to exposure of root surface that might compromise the esthetic or cause dentin hypersensitivity. Various periodontal plastic surgeries have been introduced so far to treat such gingival defects, of which the two stage procedure that combines the elimination of the local contributing factors first, followed by management of gingival recession is found to be successful.

Keywords: Gingival recession, Aberrant frenal attachment, Frenectomy, Lateral pedicle graft.

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I. Introduction

Labial gingival defects in the area of the mandibular central incisors are often unilateral sometimes bilateral present a difficult problem. These defects are commonly associated with a high insertion of the lower labial frenulum.¹ A frenulum is a small frenum, which is usually found on the maxillary labial, mandibular labial and lower lingual aspect. The primary function of maxillary labial frenum, mandibular labial and lingual frenulum is to provide stability of the upper and lower lip and the tongue². Various maxillary labial frenal attachments have been classified.^{3,4} Some frenal attachments may encroach on the gingival margin and distend the gingival sulcus, which fosters the accumulation of plaque that leads to increase in the rate of progression of periodontal recession, therefore causes recurrence after treatment². Thus, presence of aberrant frenum can become a significant problem in managing localized gingival recession. Gingival recession and aberrant frenal attachments are routinely encountered in day to day practice; various surgical techniques are being performed to correct such deformities⁵. In order to achieve a better treatment result it is mandatory to eliminate the cause or offending factor. Complete root coverage can be achievable if frenectomy / frenotomy is done Prior to the periodontal esthetic surgery like root coverage procedures. Periodontal plastic surgery is a term first given by Miller 1988 " it is a surgical procedure performed to prevent or correct anatomical, developmental, traumatic or plaque induced defects of the gingiva, alveolar mucosa or bone⁶. (The American academy of periodontology 1996) The treatment protocol followed for these deformities are usually two stage procedures, frenectomy followed by root coverage procedures⁵. Frenectomy is defined as the complete removal of the frenum, including its attachment to the underlying bone, while frenotomy is the incision and relocation of the frenal attachment⁷. By definition gingival recession is defined as the displacement of gingival margin apical to cemento-enamel junction. It results in attachment loss, root surface exposure which causes esthetic concerns and root dentin hypersensitivity. In this present case report we attempted to manage a patient with an isolated gingival recession in mandibular central incisors which was found to be caused by an aberrant mandibular labial frenal attachment (double frenal attachment). The treatment plan included frenectomy followed by root coverage procedure using lateral pedicle flap.

1.1 Case Report:

A patient named Mrs. Indu 32 years old female reported to the Department of Periodontics, APDCH College, Melmaruvathur, Tamil Nadu, with a chief complaint of sensitivity in lower front teeth region, which occurs occasionally when taking hot or cold food. On intra oral examination it reveals, presence of double frenal attachment with respect to right mandibular central incisors and Millers class II gingival recession. Apart from this the patient was apparently healthy with non-contributory medical history and she had a fair oral hygiene.

Treatment of multiple gingival recession using mother cell derivative with coronally advanced flap technique

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ABSTRACT

Gingival recession is one of the most common soft tissue problems, especially when it hinders the esthetics of a patient, it can further leads to root caries, sensitivity, and difficulty in plaque control. Gingival recession is treated to restore the gingival margin to the cement enamel junction (CEJ). The use of amniotic membrane is a novelty in the dentistry field, as it reduces the drawbacks of other materials. The aim of this case report was using amniotic membrane with coronally advanced flap technique without vertical incision in the treatment of multiple gingival recession defects. Amniotic membrane was effective in providing root coverage and an effective alternative to autograft tissue in the treatment of Miller's Class I and II recession defects.

Key words : Gingival recession, Amniotic membrane, Coronally advanced flap

Introduction:

Exposure of tooth by the apical migration of gingiva is called gingival recession, or atrophy.¹ Gingival recession occurs either due to a direct mechanical or physical injury to the gingival tissues or indirectly due to an inflammatory reaction in the gingival tissues.² Exposed root surface cause problems like unesthetic appearance, dentinal hypersensitivity, pulpal hyperemia besides being prone for caries.³ Hence root coverage has become a very important procedure in periodontics. Various periodontal plastic surgical techniques have been used for its treatment. Dino et al.⁴ revealed for the 1st time that amniotic membrane could be separated, sterilized and safely used at a later date. Amnion-derived cells have attracted lot of attention in the regeneration of periodontal tissues.

Recent data suggest that amniotic membrane provides positive results in terms of increased tissue thickness, root coverage, increased attached gingival tissue, as a barrier membrane for intrabony defects, healing of soft and hard tissue and provides excellent

esthetic results in term of color and texture match. As the membrane is considerably thin, along with having a self adherent nature, it intimately adapts to the contours around the roots and defects, eliminating the need to use sutures so the surgical time is significantly reduced.⁵ Amnion lines the innermost portion of the amniotic sac of the placenta. Its structure consists of a single layer of epithelium cells, thin reticular fibers (basement membrane), a thick compact layer, and a fibroblast layer. The basement membrane contains collagen type III, IV, and V and cell-adhesion bioactive factors including fibronectin and laminins.⁶ According to various studies the amnion basement membrane closely mimics the basement membrane of human oral mucosa. The use of amniotic membrane is a novelty in the dentistry field, as it reduces the drawbacks of other materials. The aim of this case report was using amniotic membrane with coronally advanced flap without vertical incision in the treatment of multiple gingival recession defects.

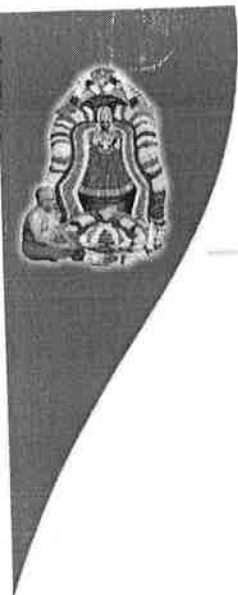
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ACADEMIC YEAR 2017-18

Technical Modification

Modified orthopedic wire twister for fixing and removing screws in craniomaxillofacial osteosynthesis

ABSTRACT

Internal fixation is the routinely performed surgical procedure in craniomaxillofacial surgery. At present, available kit for internal fixation includes large number of armamentarium. To overcome and reduce this, we have modified orthopedic wire twister for fixing and removing screws. This single device can replace self-holding screwdrivers with different sizes.

Keywords: Modified, screwdrivers, screw holder

INTRODUCTION

Internal fixation is one of the most commonly performed procedures for management of craniofacial fractures and orthognathic surgery. Screws are the basic element for the fixation of plates or similar devices onto bone or as lag screws to hold fractured fragments together. Due to various thickness of bone in craniofacial region, the screws used are between 1.0 and 2.7 mm in size, which varies in diameters, designs, and length.^[1] Existing osteosynthesis system for bone plating requires two types of screwdrivers, those which are self-holding screwdrivers and the other conventional screwdrivers to enable final tightening for fixation and initial loosening for removal. It is required that we need screwdrivers of different sizes (1, 1.5, and 2 mm) to fit different sizes of the screws available. In a patient of panfacial fracture, we may need to use all three-size self-holding screwdrivers and hence add to the number of instruments in the armamentarium inventory and also add to the cost of the treatment. In this article, we have modified an existing orthopedic wire twister that can hold all the screws and can act as a single universal screw holder/driver.

TECHNICAL MODIFICATION

It is always necessary to maintain a huge inventory of instruments when we plan internal fixation. In our modification, we have converted a stainless steel, orthopedic wire twister to hold different screws irrespective of the size and shapes of recess [Figure 1]. The beaks of the wire twister have a slot, in which screw head is held firmly and the instrument is locked using the ratchet of the wire twister [Figure 2]. The main


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PMID: [29440793](#)

Use of an amniotic membrane as a novel barrier in a tooth with a questionable prognosis

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Abstract

The chief goal of combination therapy using guided tissue regeneration along with bone grafts is to optimally and predictably regenerate the periodontal attachment apparatus. The evolution of regenerative therapy along with careful patient selection and treatment planning can have positive results even in cases which are not ideal. The present case report describes a tooth with a questionable prognosis treated successively by endodontic then periodontal therapy using an amniotic membrane along with a bone graft to treat an intrabony defect. The follow-up, 12 months later showed a resolution of the interradicular lesion and a radiographic bone fill.

Keywords: Amniotic membrane, guided tissue regeneration, intrabony defect, periobone-G, periodontic-endodontic lesion

INTRODUCTION

For 30 years, intrabony periodontal defects have been treated successfully by selective cell repopulation based guided tissue regeneration (GTR).[1] Nonresorbable membranes made way for bioabsorbable membranes, of which collagen membranes are used commonly to avoid a second surgical procedure for removal and membrane contamination.[2] However, predictability of GTR can be enhanced by the evolution of both membranes and surgical procedures.

Initially, placental tissues were used in ophthalmic surgery, then became commercially available for dentistry in 2008.[3,4] This placental allograft is a dehydrated amnion-chorion cryopreserved laminate and is a composite membrane comprised of pluripotent cellular elements embedded in a semi-permeable membranous structure; with unique regenerative properties. Amniotic membrane (AM) closely mimics basement membrane of human oral mucosa and provides a source of stem cells, immunomodulatory, anti-inflammatory, and antiscarring effects among many more which make it an exciting option for the future of periodontal regeneration.

COVID-19 Information

Public health information (CDC)

Research information (NIH)

SARS-CoV-2 data (NCBI)

Prevention and treatment information (HHS)

Español

J Contemp Dent Pract. 2017 May 1;18(5):399-404. doi: 10.5005/jp-journals-10024-2054.

Herpes Simplex 1 and Periopathogen Role in Peri-implantitis

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Affiliations

PMID: 28512280 DOI: 10.5005/jp-journals-10024-2054

Abstract

Introduction: The objectives of this study were to compare the qualitative and quantitative profiles of herpes simplex virus type I (HSV-1) in implant surfaces between participants with peri-implantitis (PI) and Healthy peri-implant tissues and to quantitatively assess the relation between HSV-1 and periopathogens inside the microbiological profile associated with PI.

Materials and methods: A total of 40 patients with PI and 40 with healthy peri-implant tissues (HI) were recruited. Plaque samples from peri-implant sulcus and internal implant connections were analyzed using quantitative real-time polymerase chain reaction to detect and quantify HSV-1 and periodonto-pathogens. Frequencies of detection and levels of microorganisms were compared between PI and HI; the frequencies and levels of periodontopathogens were compared between HSV-1+ and HSV-1- PI to assess qualitative relations between HSV-1 and bacteria. Correlation between HSV-1 and periodontopatho-gens levels was assessed in PI and HI.

Results: A total of 77 dental implants affected by PI, and 113 HIs were included. The HSV-1 prevalence was slightly higher in PI compared with controls (33.3 vs 23.8%; $p > 0.05$); HSV-1 was detected in external samples more frequently compared with internal samples. The HSV-1-positive patients revealed higher median loads of *Prevotella intermedia* (Pi) and *Campylobacter rectus* (Cr) compared with HSV-1-negative patients. In the PI group, a significant positive correlation was evidenced between HSV-1 and *Tannerella forsythia*, *Parvimonas micra* (Pm), *Fusobacterium nucleatum*, and Cr levels, while in the HI, positive correlation between HSV-1 and *Aggregatibacter actinomycetemcomitans*, Pi, and Pm was established.

Conclusion: The HSV-1 prevalence cannot be used to identify PI. The HSV-1 was found in similar levels of PI and HI patients after an average of 6 years of loaded implants. The HSV-1 prevalence cannot be used to identify implants with or without the presence of PI.

Clinical significance: Although HSV-1 is detected in PI site, HSV-1 may represent an unspecific indicator for the host response to the bacterial challenge observed in PI.

Keywords: Herpes simplex virus type I; Peri-implantitis Real-time polymerase chain reaction; Periodontopathogens.

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Original Article

A study on awareness of early detection and screening of potentially malignant oral disorders and oral cancer

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ABSTRACT

Background: Squamous cell carcinoma accounts for more than 90% of oral malignancies. The incidence of squamous cell carcinoma of oral cavity differs widely in various parts of the world. It is well within the scope of General Dental Practitioners (GDPs) to carry out certain diagnostic investigations such as exfoliative cytology and oral tissue biopsy to determine the nature of the lesion.

Aim: The aim of this study was to assess the awareness concerning the early detection and screening of potentially malignant oral disorders and oral cancer among general dental practitioners of Tamil Nadu.

Materials and Methods: Questionnaires were sent to 194 general dental practitioners. The completed questionnaire was collected immediately. Confidentiality of the participants was guaranteed.

Statistical Analysis: The statistical analysis included the use of descriptive statistics.

Results: Approximately 97% of the participants conducted intraoral soft tissue examination; 86.5% recorded the tobacco habits of the patients and approximately 97% said that they counsel the patient to stop tobacco habits. A total of 23% said potentially malignant oral disorders (PMOD) was scrapable in nature and 77% said it was non-scrapable. A total of 69% of the dentists answered that white lesions had more probability to change into oral cancer. In this study, 92% mentioned that if they suspect oral cancer in their patients then they would examine the regional lymph nodes. When questioned about the best technique for early diagnosis of oral cancer, 24% assumed exfoliative cytology, 73% accepted biopsy. A total of 43% revealed that they had performed these diagnostic procedures in their clinics. A total of 75% dentists suggested that they needed a consultant oral pathologist. A total of 78% participants had attended continuing dental education programs related to oral cancer. On confirming the diagnosis of cancer, 75% referred their patients to regional cancer centres.

Conclusion: The findings on the awareness concerning the early detection and screening of PMOD and oral cancer among GDPs show the need for clinicopathologic correlation.

Key words: General dental practitioners, oral cancer, potentially malignant oral disorders, screening

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Case Report

Platelet-rich Fibrin Application in Immediate Implant Placement

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ABSTRACT

The dental rehabilitation of a patient following single-tooth extraction in the esthetic zone is often clinically challenging. The treatment option for this is implant-supported single crown which has the advantage that adjacent teeth do not have to be prepared, as in a fixed prosthesis. This article presents a case of immediate implant placement in relation to 22 and a guided bone regeneration approach with platelet-rich fibrin (PRF) and bone graft. After immediate implant placement, to compensate for the gap (jumping distance) between the implant surface and bone walls of the socket, we used bone grafts and PRF clot as well as PRF membrane to achieve guided bone regeneration. PRF, which is the second generation platelet concentrate, offers the surgeon an access to growth factors with a simple and available technology. These growth factors, which are autologous, nontoxic, and nonimmunogenic, enhance and accelerate the normal bone regeneration pathways. The case presented showed successful outcome with a 1 year follow-up period.

KEYWORDS: Extraction socket, immediate implants, platelet concentrates, platelet rich fibrin

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INTRODUCTION

Single-tooth replacement with an implant-supported crown is gaining importance in treating partially edentulous patients. In posterior sites, the primary objective of single-tooth replacement is the reestablishment of masticatory function. Esthetic considerations in these areas are less frequently of concern. In contrast, anterior sites are more closely linked to esthetic expectations and often represent a considerable challenge. Hence, immediate implant placement at the time of extraction or early implant placement following a few weeks of soft tissue healing has become a treatment of choice.

The obvious advantages of immediate implant placement are minimal number of surgical procedures and shortest possible treatment time from tooth extraction to implant restoration.

CASE REPORT

A 40-year-old female patient presented with a complication following root canal treatment (RCT) in 22.

History revealed that the patient allegedly met with trauma and fractured 22, for which she underwent RCT and postcore. Even after 4 months of endodontic treatment, there was recurrent periapical infection in 22, which was confirmed with Orthopantamogram [Figures 1 and 2]. There was no relevant medical or surgical history. The treatment plan proposed was extraction of 22 and immediate implant placement.

She had already undergone replacement of 12 by implant prosthesis in a private dental clinic. The patient was informed about the relevant aspects of the treatment. Written consent was obtained from the patient for the same.

Preparatory phase

Preparation of the patient included scaling and root planing of the entire dentition and oral hygiene instructions.

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Black to Pink: A Case Report of Treating Gingival Hyperpigmentation

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ABSTRACT

Aim: Gingival depigmentation is a periodontal plastic surgical procedure by which the gingival hyperpigmentation is removed or reduced by various techniques. The present case report aims at yielding aesthetically acceptable results by using scalpel for depigmentation that doesn't require any elegant instruments or apparatus.

Case Report: A 23 years old female patient with the chief complaint of blackish discoloration of her gums. On intraoral examination, the gingiva presented with generalized pronounced blackish melanin pigmentation which was un-aesthetic while smiling. Depigmentation using Scalpel was performed by complete removal of hyper-pigmented gingiva.

Discussion: Even though numerous techniques have been employed for depigmentation, the selection of a technique should predominantly based on clinical expertise, individual preferences and patient's affordability. Scalpel was chosen for the present case because of the superior properties like simplified procedure, cost-effective and also complete removal of hyper-pigmented gingiva could be achieved.

Conclusion: With the limitations of present study, it could be concluded that gingival depigmentation using scalpel was easy to perform, cost-effective and above all it causes minimum discomfort to the patients with excellent results and patient satisfaction.

Key Words: Gingival hyperpigmentation, Blackish gingiva, Melanin pigmentation, Scalpel depigmentation

INTRODUCTION

A charming smile can open doors and knock down barriers that stand between an individual and a fuller, richer life.¹ If the teeth is considered as the canvas of a painting, then the gum tissue will be the frame around the canvas. In other words, the gum tissue can make or break a smile.

The colour of the gingiva is determined by numerous factors that includes the size and number of blood vessels, thickness of the epithelium, the quantity of keratinization, and the pigments within the epithelium.

The colour of the attached and marginal gingiva is generally described as "coral pink" due to the thickness and degree of keratinization of the epithelium, the vascular supply and the presence of pigment-containing cells.²

Brown or dark pigmentation of the gingival can be caused by a array of local and systemic factors. Systemic conditions

such as antimalarial therapy, malignant melanoma, Peutz-jeghers syndrome, Albright's syndrome, trauma, endocrine disturbances hemochromatosis, chronic pulmonary disease and racial pigmentation are the identified causes of oral melanin pigmentation.³

Melanin is a non- hemoglobin-derived brown pigment, present in all normal individuals but high levels of oral melanin pigmentation are observed in individuals of African. East Asian.

The distribution of pigmentation in oral cavity in black individuals is as follows: gingiva, 60%; hard palate, 61%; mucous membrane, 22%; and tongue, 15%. Gingival pigmentation occurs as a diffuse, irregularly shaped brown and light-brown patch. It may appear in the gingiva as early as 3 hours after birth, and it is often the only evidence of pigmentation.⁴

During recent years, the need for aesthetics in dentistry has

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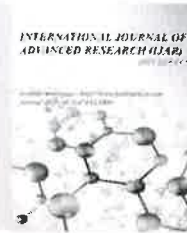
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**RESEARCH ARTICLE****NANOTECHNOLOGY IN DENTISTRY-A REVIEW.**

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Key words:-

Nanodentistry, Nanomaterials,
 Nanotechnology.

Abstract

Man's quest to create new technology and materials which are better and more efficient led to the introduction of nanotechnology that deals with structures ranging in the size of 100 nanometers or smaller in at least one dimension and developing materials or devices within that size. The basic idea of nanotechnology is to employ individual atoms and molecules to construct functional structures. Nanotechnology has revolutionized all fields from healthcare to engineering into new archetype beyond traditional and dentistry is no exception. This review provides the role of nanomaterials and their potential to be used in the diagnosis and management of oral diseases.

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Introduction:-

Rationalizing has become a new trend in the world of science and technology. Nanotechnology has ascended one of the most favourable technologies and one which change the application of materials in different fields. The quality of dental biomaterials has been improved by the emergence of nanotechnology. This technology manufactures materials with much better properties or by improving the properties of existing materials. The science of nanotechnology has become the most popular area of research, currently covering a broad range of applications in dentistry.¹ Nanotechnology is the engineering of functional system at the molecular scale. It deals with structures ranging in the size of 100 nanometers or smaller in at least one dimension and developing materials or devices within that size. The basic idea of nanotechnology is to employ individual atoms and molecules to construct functional structures. It gives us an understanding of how structures are made at a fundamental level and how their molecular arrangements can be altered to alter the macroscopic properties of a material².

History:-

The term nanotechnology is derived from the Greek word 'nanos' meaning dwarf. The Nobel Prize winning physician Richard.P.Fenyman, during his 1959, plenty of room at the Bottom speech to the American Physical Society, had first projected this dimensions of discoveries at a billionth meter scale. The term nanotechnology was introduced by Norio Taniguchi in 1974, when he referred to a 'production technique to get extra high accuracy and ultrafine dimensions'. Later in 1986, K.Eric Drexler contributed to its development by introducing the concept of molecular nanotechnology in his 1986 publication, Engines of creation, the coming era of nanotechnology.

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Ecofriendly, Economic Surrogate for Xylene

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Abstract

Background: Xylene is an aromatic hydrocarbon, mostly used as a clearing agent during tissue processing and as a de-waxing agent during histopathological staining. The biohazardous nature of xylene, makes it a potential occupational hazard for histopathological technicians. Exposure to xylene can occur via inhalation, ingestion or direct contact with skin, eyes etc. Exposure and handling sections of xylene is maximum during de-waxing of sections. These have led to the question of a substitute agent which is less toxic and safer.

Aim: To assess the efficacy of 1.5% of dishwashing liquid and 1.5% of detergent liquid as a deparaffinizing agent for H&E staining technique.

Objective: To utilize eco-friendly, economic substitute for xylene.

Materials and Methods: Using 20 paraffin embedded tissue blocks, three sections were prepared and considered into 3 groups as Group A, Group B, Group C. Group A was stained with conventional H&E method, Group B was stained using 1.5% of dishwashing liquid as a deparaffinizing agent and Group C was stained using 1.5% of detergent liquid as a deparaffinizing agent.

Statistical Analysis: ANOVA test was used to calculate the test of significance.

Result and Conclusion: 1.5% of dishwashing liquid and 1.5% of detergent liquid are comparatively an effective alternative for xylene thus acting as an ecofriendly, economic surrogate for xylene.

Keywords: xylene, dishwashing liquid, detergent liquid

I. Introduction

Xylool or dimethylbenzene also called as xylene, is an aromatic synthetic hydrocarbon that plays a vital role in pathological laboratory for many years. It is available naturally in the form of coal tar and petroleum, obtained its name from crude wood spirit.¹ It is colorless, flammable liquid or gas with a sweet odour. Xylene is being used as a clearing agent in tissue processing where it causes maximum displacement of alcohol and makes the tissue transparent thus enhancing paraffin infiltration and acts as a deparaffinizing agent in staining procedure.² Although it is extremely useful, when exposed, it leads to health hazards to almost all parts of the body ranging from nausea, vomiting to death. Current Occupational Safety and Health Administration permissible limit for exposure to xylene is 100 ppm as an 8-hour time-weighted average (TWA) concentration.³ Limonene reagents, aliphatic hydrocarbon mixtures, aromatic hydrocarbon mixtures, and mineral oil mixtures were used as alternatives for xylene in tissue processing as clearing agent.⁴ But peak exposure takes place during de-waxing of sections. Long term exposure leads to permanent disability caused by diminution of mitochondrial adenosine triphosphate in the affected cells.⁵ Hence, the present study is intended to replace xylene with nonbiohazardous agents like dish washing liquid and detergent liquid.

Aim: The aim of the present study is to assess the efficacy of 1.5% of dishwashing liquid and 1.5% of detergent liquid as a deparaffinizing agent for H&E staining technique and to utilize eco-friendly, economic substitute for xylene

II. Materials and Methods

Twenty paraffin embedded tissue blocks from our department were obtained. Three sections of 4 to 5 microns thickness were prepared from each block. One section was stained with Conventional H&E method where xylene was used as deparaffinizing agent. The other two sections were stained with Xylene Free Hematoxylin and Eosin (H and E), where 1.5% Dishwashing liquid (1.5mL Vim dish washing solution in 98.5mL distilled water) and 1.5% of Detergent liquid (1.5mL Surf excel detergent washing solution in 98.5mL distilled water) were used as deparaffinizing agent. The three sections were categorized as:



Breaking the Tongue Thrusting Habit: When Compliance Is Essential- A Case Report

Dr. A.Vasanth Kumari, Dr. K.Vivek, Dr. Vivek Reddy, Dr. S. Anitha

Abstract— Oral habits can interfere with the growth and normal development of the jaws, favouring the onset of malocclusion and changes in normal swallowing and speech patterns depending on factors such as duration, frequency, intensity and facial pattern. The open bite is most frequently seen in anterior region, having deleterious habits as one of its main etiological factors. This case report is focussed on the correction of tongue thrusting habit in a 7 year old child female patient.

Index Terms— Tongue thrusting, Proclination, Overbite.

I. INTRODUCTION

A habit is a repetitive action that is being done automatically. The mouth is the primary and permanent location for expression of emotions and is a source of relief in passion and anxiety in both children and adults, stimulation of this region with tongue, finger, and nail can be a palliative action. Trident factors like duration of the habit per day, degree and intensity of habit are responsible for any habit to produce detrimental and lasting effects¹. Tongue thrust swallowing has been defined as the forward placement of the tongue lie between the incisors, during deglutition. Tongue thrusting can occur because of delayed transition between infantile and adult swallowing pattern. Normally the transition begins around the age of 2 years, and completed by the age of 6 years².

Tongue thrust is a forward placement of the tongue between the anterior teeth and against the lower lip while swallowing, according to Schneider (1982). During infantile swallow the tongue is placed between the gumpads. After 6 months of life, several maturational events occurs that alter the functioning of the orofacial musculature with the arrival of incisors, the tongue assumes a retracted posture. If the transition of infantile to mature swallow does not takes place with the eruption of teeth, then it leads to tongue thrust swallow³. In a normal swallowing pattern, the distal part of the tongue touches the palate and the tip is placed on the back of the upper incisors. Whereas in tongue thrusting habit the middle part of the tongue disturbs the equilibrium existing

between forces exerted upon the teeth and results in dental complication and disorders⁴.

The prevalence of oral habits in high school and primary school students have been reported as 34% and the most prevalent was 18% of tongue thrusting habit. The reason attributed was the constant change over the teeth in mixed dentition, often leading to open spaces, thereby prompting a habit of tongue thrusting⁵. The present article describes the management of deleterious tongue thrust habit in a 7 year old female patient with habit breaking appliance.

II. CASE REPORT

A 7 year old girl reported to the Department of Pedodontics with a chief complaint of irregularly arranged teeth. At initial presentation her height was 120cm and weight of 22kg. She was healthy and no complication has been reported at birth. Her medical and family history are non-contributory. Extra oral examination assessment reveals convex profile, incompetent lip, retrusive chin and increased lower lip length. On intra oral examination, patient has normal soft tissue mucosa, presence of generalised marginal gingivitis, Angle's class I malocclusion with open bite and presence of tongue thrusting habit. Radiographic examination of lateral cephalogram revealed short anterior cranial base, proclined maxillary incisor, vertical growth pattern, retrognathic mandible, decreased mandibular ramus, and effective mandibular length. During each swallow, the tongue can exert momentary pressure of 1 to 6 pounds on the surrounding structure of the mouth. This pressure will push the teeth and bone forward apart. Tongue thrusting will move teeth into abnormal position and cause growth distortion of the face and teeth. Based on clinical and radiographic findings, the tongue thrusting habit was confirmed and planned for habit breaking appliance, the upper Hawley's appliance with tongue crib.

Initially the patient was treated with oral prophylaxis followed by oral hygiene instruction. Habit breaking appliance, the upper Hawley's appliance with tongue crib was fabricated and delivered. The patient was counselled and motivated for regular follow up.



Fig - 1. Showing proclined upper anterior

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Aesthetic Outcome of a Case of Orbital Floor Fracture Treated Using a Retroseptal Transconjunctival Approach

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Disclosures can be found in Additional Information at the end of the article

Abstract

The orbital floor is a bone structure frequently involved in orbital fractures. Various methods have been documented to approach the orbital floor and infraorbital rim. Traditionally, transcutaneous approaches like infraorbital, subciliary, and subtarsal have been employed to access the orbital floor and infraorbital rim. A significant amount of complications including a visible, prominent scar, eyelid abnormalities like ectropion, lower lid retraction, and increased scleral show result from these transcutaneous approaches. To overcome these complications, the transconjunctival approach has been preferred recently. However, the transconjunctival approach has been associated with rare complications like entropion, synechia, or trichiasis. In the present article, we report a case of orbital floor fracture treated using a retroseptal transconjunctival approach. We intend to evaluate the aesthetic outcome of a case of orbital floor fracture treated using a retroseptal transconjunctival approach.

Categories: Plastic Surgery, Miscellaneous, Trauma

Keywords: orbital floor fracture, retroseptal transconjunctival approach, scarless approach

Introduction

Lang initially described an orbital blow fracture in 1889 as the mechanism by which an impact to the eyeball was transposed as mechanical energy to the orbital walls, causing them to fracture [1,2]. The various indications for surgery in an orbital fracture were described by Gassner et al. as follows: 1) Fractures involving one half or more of the orbital floor and/or medial wall; 2) Computed tomography (CT) evidence of orbital soft tissue entrapment; 3) Diplopia and ocular motility limitation within thirty degrees of primary position; 4) Enophthalmos of more than 2 mm; and 5) Hypesthesia of the infraorbital nerve territory [5]. Despite executing proper surgical technique and achieving a successful anatomic reconstruction of the orbit, a few complications like enophthalmos, diplopia, and hypesthesia of the infraorbital nerve territory were encountered at a long-term follow-up [4-6]. The various surgical accesses to the orbit include the following: 1) A transorbital approach using a skin or conjunctival incision; 2) A transantral approach; and 3) An endoscopic endonasal approach [7]. The various transcutaneous approaches, namely, the infraorbital incision, subtarsal incision, and subciliary incision, have demonstrated a significant rate of complications. However, transconjunctival incision has comparatively few complications like entropion and scleral show. The preseptal transconjunctival approach is more cumbersome whereas a

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Palatal swelling in a young adult

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Abstract

The presence of numerous minor salivary gland tissues in the posterior part of hard palate increases the possibility of salivary gland neoplasms. Minor salivary gland tumor accounts for about 15% of all the salivary gland neoplasms, of which mucoepidermoid carcinoma (MEC) accounts for about 35.9%. Although a wide range of the differential diagnosis is made by the clinicians toward a single palatal swelling without any other specific changes on inspection, a prompt "histopathological" diagnosis is of utmost importance in case of lesions like "MEC." By taking the case study of a 23-year-old male patient who was complaining of difficulties in eating and speaking due to a swelling in the palate that was not associated with pain, etc., this case report highlights the need for an early clinical examination and prompt histopathological diagnosis of such clinically benign looking lesions, as such an action can play an ameliorating role in reducing the chances of postoperative morbidity.

Keywords: Minor salivary gland, mucoepidermoid carcinoma, palate

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INTRODUCTION

Salivary gland carcinoma constitutes 0.5% of all known malignancies and accounts for between 3% and 5% of head-and-neck cancers reported across the globe.^[1,2] Due to being relatively rare neoplasms, the histopathology of salivary gland tumors are considered complex and poses challenges to diagnostic pathologists.^[3] The classification carried out by the World Health Organization^[4] (WHO) consists of over 40 named neoplasms, most of which show considerable amount of morphological diversity, and due to the overlapping features contained in such a classification, difficulties have been encountered in differentiating various types of tumors. There is a further hardship due to the existence of a range of nonneoplastic lesions that present themselves like tumors both clinically and histologically.^[5]

In such a scenario, it can be of substantial clinical value if efforts are made to identify effective early markers for the diagnosis of similar lesions.

The "mucoepidermoid carcinoma" (MEC) is one of the malignant salivary gland neoplasms involving major and minor salivary glands. The first accurate description of the MEC was attributed to Masson and Berger who summarized it as "*double metaplasia epitbelioma*."^[6]

In the light of the above, this report deals with a case of a 23-year-old patient diagnosed histopathologically as "MEC" involving the hard palate, which presented itself as a gradual increasing swelling, persistent in nature, localized to the palatal mucosa with no secondary changes in color and or surface ulceration.

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A Case Report of Scarless Direct Access to the Infraorbital Rim Using a Retroseptal Transconjunctival Approach

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Disclosures can be found in Additional Information at the end of the article

Abstract

A variety of approaches have been documented in the literature for accessing the infraorbital rim and orbital floor in cases of fractures involving orbitozygomatic maxillary complex fractures. Various transcutaneous approaches like infraorbital, subtarsal, and subciliary approaches have been employed traditionally to access these regions. However, significant postoperative complications are associated with these approaches. The transconjunctival approach to access the infraorbital rim and orbital floor has recently been re-evaluated. We present a case of a patient with a zygomaticomaxillary complex fracture in which the infraorbital rim was fixed using a transconjunctival retroseptal approach.

Categories: Plastic Surgery, Miscellaneous, Trauma

Keywords: retroseptal transconjunctival approach, scarless approach, direct access technique

Introduction

The incidence of oral and maxillofacial injuries is constantly on the rise and may be attributed to the surge in the number of motor vehicles and noncompliance of riders in wearing helmets or seat belts. The zygoma, being the most prominent bone on the face, is commonly affected in maxillofacial injuries and is frequently involved in combined orbitozygomatic maxillary complex fractures [1]. The various transcutaneous approaches to the infraorbital rim and orbital floor include subciliary, subtarsal, and infraorbital approaches, and they have been associated with a significant number of complications like ectropion, scleral show, and eyelid retraction [1]. In 1924, Bourguet initially used a transconjunctival approach for lower eyelid blepharoplasty [2]. The same technique was employed later by Tenzel and Miller to access small orbital floor fractures [2]. It was further used by Tessier to access the orbit in patients with craniofacial dysostoses [3]. However, with the progressive use of transconjunctival incisions, the rate of complications was drastically reduced. Also, the absence of a visible scar is a great advantage in executing a transconjunctival incision. The retroseptal transconjunctival incision has an additional advantage in offering direct access to the inferior orbital rim and floor without violating the orbital septum. We present a case of zygomatic maxillary complex fracture treated using a retroseptal transconjunctival approach.

Case Presentation

A 57-year-old male patient reported to our private practice with injuries attributed to a road traffic accident. He reported sustaining a fall from a two-wheeler

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Review Article

Systematic analysis of factors that cause loss of preload in dental implants

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Abstract

Screw loosening is the most common factor associated with dental implant failure. One of the major cause for screw loosening is the "loss of preload". Several factors including screw geometry, material properties particularly stiffness, surface texture and condition of mating surfaces, degree of lubrication, rate of tightening, integrity of joint etc.

Objective: This review analyses the factors that are responsible for the loss of preload.

Material and Methods: Screw geometry, Implant- Abutment Connection type (external hexagon platform, morse taper), Material properties viz Stiffness, Resilience, Materials viz gold, titanium, titanium alloy, Surface texture of the abutment screw, Condition of mating surfaces, Lubrication, Torque value, Rate of tightening (10, 20, 35N and retorque after 10mins) are taken into consideration in this study. The MEDLINE-PubMed database was searched from September 2016 to 10 years previously. Several journals were hand searched and from cross references. The outcome analysed are the factors that are responsible for loss of preload.

Results: The search yielded 84 articles. After excluding duplicated abstracts and applying the inclusion and exclusion criteria, 36 studies were eligible for analysis. The result shows that loss of preload can occur depending upon the type of material used, torque method, torque sequences, abutment connection type, influence of lubrication, abutment collar length. However we detected some potential limitations in the studies selected, mainly a minimum number of samples used for the study. Hence we suggest further studies to guarantee an excellence in methodological quality.

Conclusion: Based on the available data it can be summarized that the knowledge of preload loss must be known for the clinicians to avoid such screw loosening and subsequent implant failure.

Keywords: Abutment screw, dental implant, preload

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INTRODUCTION

The most common failure associated with dental implant is screw loosening and fracture of implant.^[1] One of the

major causes for screw loosening is the "loss of preload." Preload is the axial force in the neck of the screw, which is between the first mating thread and head of the abutment screw.^[2] The tensile force clamps the abutment

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Temporomandibular joint changes in oral submucous fibrosis- A magnetic resonance imaging study

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Abstract

Background: The aim of this study was to assess the Temporomandibular joint changes as a consequence of varying degrees of restricted mouth opening in Oral Submucous Fibrosis patients.

Material and Methods: The study Population was divided into 2 groups namely Group C- 40 TMJ's of 20 age and gender matched healthy controls and Group P- 40 TMJ's of 20 OSMF patients who were further subdivided into Group II,III,IV based on their restriction in mouth opening. MRI of bilateral TMJ was obtained in closed mouth position. Disc thickness, disc length, joint space and condylar changes were assessed. The collected data was subjected to statistical analysis.

Results: Disc thickness, disc length and joint space was significantly reduced in Group III and Group IV OSMF patients when compared to controls ($P<0.05$). Condylar flattening was seen in Group III (56.3%) and Group IV (50%) OSMF patients. One joint (2.5%) in Group IV had condylar flattening with erosion whereas no joints in Group II OSMF and controls had condylar flattening and erosion ($P<0.05$).

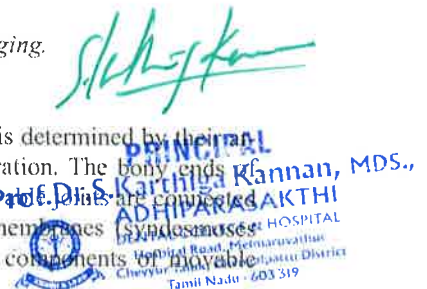
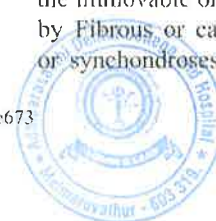
Conclusion: Thus the present study has revealed statistically highly significant changes in the components of Temporomandibular joint in OSMF patients with varying degrees of restriction in mouth opening when compared to controls. Also the severity of the changes increases with increase in severity of the disease, which was found to be statistically highly significant.

Key words: Oral submucous fibrosis, temporomandibular joint, magnetic resonance imaging.

Introduction

Human beings have the capacity to produce a variety of movements that require the structures of the human body to both generate and respond to forces that produce and control movement at the body's joints. The

relative mobility of the joints is determined by their architecture and tissue concentration. The bony ends of the innovable or slightly movable joints are connected by Fibrous or cartilaginous membranes (Synsidoses or synchondroses). The bony components of movable





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Indagation of serum and salivary reactive oxygen metabolite and cortisol levels in chronic periodontitis and stress-induced chronic periodontitis patients

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Abstract

Background:

Periodontal disease is not a conventional bacterial infection but is an inflammatory disease initiated by immune response against a group of microorganisms in susceptible hosts. There are many intriguing researches that unfold the secrets of chronic periodontitis. The current researches in chronic periodontitis are directed toward an approach that respects the scientific relationship between the various risk factors, the genetic factors, and the progression of the disease.

Aim:

This study aims to evaluate the cortisol and reactive oxygen metabolites (ROM) concentration in serum and to find out their association in periodontal health and disease.

Materials and Methods:

In this study, totally thirty patients have been taken and divided into two groups of chronic periodontitis (Group I) and stress-induced chronic periodontitis (Group II) and evaluated the correlation between the ROM and cortisol levels in them. This is the first study, where both the levels of ROM and cortisol are checked in the serum and saliva. The analysis is done to check the association between them.

Statistical Analysis:

The data were statistically analyzed using software program (SPSSV 16), Pearson correlation, *t*-test.

Results:



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Tooth discoloration and internal bleaching after the use of ledermix paste with various bleaching agents – An *in vitro* study

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Abstract

Background: To assess the reversal of discolouration caused by Ledermix using various bleaching agents.
Material and Methods: Twenty six extracted human mandibular premolars were taken and divided into four groups. Six teeth were divided into three each which are taken as positive and negative controls. The remaining twenty are divided into two groups (n=10). After conventional access preparation, the Ledermix paste was sealed in the pulp chamber for twelve weeks. The paste was removed by a rinse with sodium hypochlorite (NaOCl). Then the pulp chamber was sealed with a mixture of Sodium perborate and distilled water for group 1 and group 2 was sealed with Sodium tetraborate for 1 to 12 weeks. The shade was measured by a Spectrophotometer at four time periods baseline(T0), after 12 weeks of placement of Ledermix (T1), after 4 (T2), 12 (T3) weeks of Internal bleaching with Sodium perborate and Sodium tetraborate respectively. Data were collected based on CIE-76 (L*a*b*) system and analysed using t-test and ANOVA.
Results: A significant decrease in the mean value of L*(lightness) was observed after treatment with Ledermix (T1, P<0.05). Considerable increase in these values after bleaching with Sodium perborate and Sodium tetraborate (T2, T3) were found in both groups, to the same extent.
Conclusions: Ledermix discoloured the tooth structure but discolouration could be reversed when bleached with both Sodium perborate and Sodium tetraborate to the same extent.

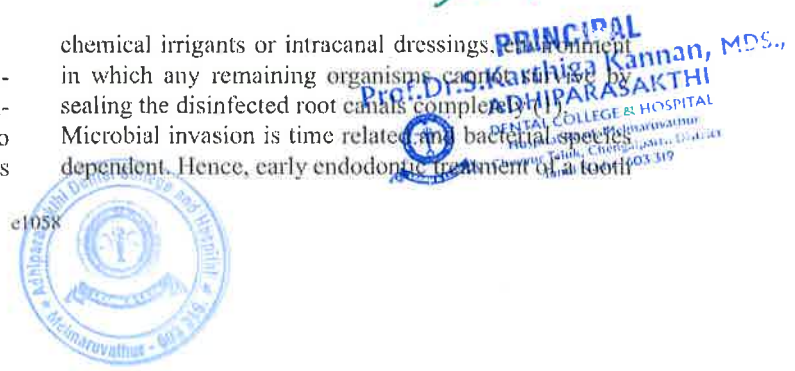
Key words: Bleaching, discoloration, ledermix, sodium perborate, sodium tetraborate.

Introduction

The ultimate goals of endodontic treatment are to remove as many bacteria, their by-products, and pulpal remnants from the infected root canal system and then to create an preparation with antimicrobial agents, such as

chemical irrigants or intracanal dressings. The aim is to eliminate in which any remaining organisms can be removed by sealing the disinfected root canals completely.
Microbial invasion is time related and bacterial species dependent. Hence, early endodontic treatment of a tooth

Signature



Original Article

Comparison of Dimensional Stability of Die Stone and Die Silicone: An *In Vitro* Comparative Study

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ABSTRACT

Background: Die silicone is used for making dies for chair side fabrication of inlays and onlays. Die silicone material is user friendly and fast setting but undergoes shrinkage. **Aim:** To compare the dimensional stability between Die stone and Die Silicone. **Methods:** A metal die with known dimensions is made. Impressions of the metal die are made with Polyether impression material. Dies are made out of Die Stone and Die Silicone. The Dimensions of the reproduced details are measured and compared. **Results:** Both Die Stone and Die Silicone produce comparable results. **Conclusion:** As Die Silicone is made of Polymer, its dimensional stability is a query. But in the study it was found that, they had similar results. With the advantages of fast setting, chipping and abrasion resistance, it would make Die Silicone a more user friendly material of choice for die making.

KEYWORDS: Die silicone, die stone, dimensional accuracy, indirect restoration, polyether impression material

CLINICAL RELEVANCE TO INTERDISCIPLINARY DENTISTRY

- Die silicones are dimensionally accurate, easy to use and cast of prepared tooth can be obtained in a short period of time for any chair side procedures in prosthodontics and aesthetic dentistry.

INTRODUCTION

Die stone has been the most popular material in dentistry for producing dies. To overcome the disadvantages of this material, die silicone materials have been introduced and are reported by the manufacturers to be dimensionally accurate, more abrasion resistant, and stronger than the improved stones.^[1]

Provisional crowns and indirect composite acrylic resin inlays are made with flexible die materials. The use of indirect techniques for the fabrication of prosthodontic restorations has become almost universal. The flexible die technique uses an impression of a prepared tooth made with standard impression materials. After applying a separator where indicated, the die is made by pouring the impression with a flexible die material. When set, the die is removed from the impression, and the restoration is then fabricated and finished on the flexible die.^[1,2]

This technique allows an indirect provisional or a definitive restoration to be made without specialized equipment in a single appointment. Although die silicones have been used for the fabrication of provisional restorations, they have not been used for the construction of metal or metal-ceramic restorations due to concerns on dimensional accuracy. The aim of this study is to compare the dimensional stability of die silicone as a duplicating material with die stone.

MATERIALS AND METHODS

The method that was followed is as follows:

- A master die is made of known standard value [Figure 1a]

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ORIGINAL ARTICLE

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Effect of various luting agents on retention of cement-retained implant restorations with different modifications - An *in-vitro* study

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Abstract

Introduction: Cement-retained restorations are the most common mode of attaining retention in implant prosthesis. Surface modifications can enhance the retention of the cement-retained implant restorations. **Materials and Methods:** A total of 45 copings ($n = 45$) were fabricated and divided into three groups based on the types of cements used: Group A – zinc phosphate cement, Group B – zinc polycarboxylate cement, and Group C – glass-ionomer cement. Each group was subdivided into three subgroups depending on the surface treatment employed: Subgroup 1 – unmodified copings (controlled group), Subgroup 2 – sandblasted copings, and Subgroup 3 – roughened abutment. The blocks with abutments on which the coping was cemented on them were locked on a universal testing machine. **Results:** The mean load required to debond the copings cemented with zinc phosphate cement under various surface modifications was found to be 154 N for unmodified copings, 184 N for sandblasted copings, and 171 N for roughened abutments. The mean load required to debond the copings cemented with zinc polycarboxylate cement under various surface modifications was found to be 212 N for unmodified copings, 325 N for sandblasted copings, and 390 N for roughened abutments, respectively. The mean load required to debond the copings cemented with Type 1 glass-ionomer cement under various surface modifications was found to be 302 N for unmodified copings, 413 N for sandblasted copings, and 412 N for roughened abutments. **Conclusion:** The retentive properties of the three types of cements tested in this study were statistically significant. Type 1 glass-ionomer cement shows the highest mean retentive strength, followed by zinc polycarboxylate and zinc phosphate cement. There was no statistically significant difference between the sandblasted and roughened abutment copings cemented with Type 1 glass-ionomer cement.


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Full Text

A SYSTEMATIC REVIEW OF ACCURACY OF CONVENTIONAL TECHNIQUE AND DIGITAL PHOTOGRAPHIC TECHNIQUE FOR TOOTH SHADE MATCHING.

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Abstract:

Shade matching of a restoration to the remaining natural teeth is of primary importance to all the patients. Various types of guides are present to facilitate the colour matching process. Digital photographic image makes it possible to evaluate several points which can aid in determining the true shade of a tooth. A comprehensive search was performed to identify related studies for inclusion in the review. All identified titles and abstracts were independently assessed for subject relevance. Full texts were then obtained and formally assessed for inclusion. This systematic review evaluated 29 studies that compared the efficacy of visual and instrumental shade matching methods.

Key words:

digital shade matching, conventional shade matching.

Introduction

The increasing aesthetic expectations in daily life directly affect techniques and treatment procedures in dentistry. Shade matching of a restoration to the remaining natural teeth is of primary importance to all the patients. The aesthetic demands of patient

and dentists have elevated the importance of accurate shade matching.

Traditionally it has been performed visually with the aid of shade guide. Various types of guides are present to facilitate the colour matching process. However, irrespective of the type of shade guide system used, visual shade determination is associated with a high degree of sensitivity. Therefore a demand for methods that can analyze tooth shade objectively has emerged.

In this "information age" use of digital cameras and computers have become widespread in dentistry. Digital photographic image makes it possible to evaluate several points which can aid in determining the true shade of a tooth. The instrument is capable of recording digital data from an object and producing an image on computer screen, which can then be transmitted via internet. Images produced via a digital camera may be analyzed using appropriate imaging software.

Shade matching that is based on digital imaging is convenient and less expensive than the use of spectrophotometers and colorimeters.

So a systematic analysis was undertaken to review the matching performance of digital photographic shade analysis and conventional visual shade



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ACADEMIC YEAR 2018-19

Original Research

An *In Vitro* Evaluation of Fracture Resistance of Endodontically Treated Maxillary Central Incisor Restored with Custom-Made Cast Post and Core with Uniform and Nonuniform Core Ferrule Heights

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ABSTRACT **Aim:** The aim of this study was to evaluate *in vitro* fracture resistance of endodontically treated teeth restored with custom-made cast post and core having uniform and nonuniform core ferrule heights. **Materials and Methods:** Thirty-five freshly extracted human maxillary central incisors were included in this study. All teeth were subjected to standard root canal treatment. The teeth were randomly divided into five groups—Group 1: uniform ferrule (2 mm buccal, lingual, and proximal), Group 2: uniform ferrule (3 mm buccal, lingual, and proximal), Group 3: nonuniform ferrule (2 mm buccal, 3 mm lingual), Group 4: nonuniform ferrule (2 mm buccal, 4 mm lingual), and Group 5: no ferrule. The teeth were sectioned horizontally 4 mm above cemento-enamel junction and post space preparation was performed maintaining 4 mm of apical gutta-percha. Ferrule was prepared according to dimension designated for each group. Custom-made cast post and core were fabricated and luted using zinc phosphate cement. Testing was conducted using universal testing machine with application of static load (Newton), and failure load was recorded. Data were analyzed by one-way analysis of variance and Tukey test. The mode of fracture was noted by visual inspection for all specimens. **Result:** Significant differences ($P < 0.001$) were found among mean fracture forces of test groups. Group 1: 1181.66 ± 68.29 , Group 2: 1455.58 ± 173.11 , Group 3: 1019.00 ± 52.55 , Group 4: 971.58 ± 66.52 , and Group 5: 888.00 ± 60.56 . The presence of nonuniform ferrule height resulted in a significant decrease ($P < 0.0001$) in mean fracture strength compared to uniform 2- and 3-mm core ferrule height. **Conclusion:** The central incisors restored with cast post and core and crowns with 3-mm uniform core ferrule were more fracture resistant compared to central incisors with nonuniform core ferrule height. Both the uniform and nonuniform core ferrule groups were more fracture resistant than the group that lacked ferrule.

KEYWORDS: Custom-made cast post and core, endodontically treated teeth ferrule, fracture resistance

INTRODUCTION

Root-filled anterior teeth with extensive loss of tooth structure often requires a post and core due to lateral and shearing force acting on it, and presence of smaller pulp chambers as compared to molars.⁽¹⁾

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Dermatoglyphics and Their Relationship With Blood Group: An Exploration

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Abstract

Introduction:

Dermatoglyphics means the study of skin markings or patterns on fingers, hands, and feet. Dermatoglyphics is a heritable trait that is considered as a usual phenotype in criminology. Dermatoglyphics acts as a scientific method for identification of an individual and it is constant till demise.

Objectives:

This study was conducted to correlate the dermatoglyphics and blood grouping of 150 dental students.

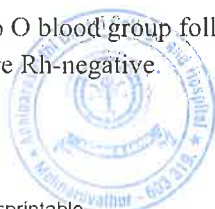
Materials and Methods:


A pro forma was prepared on a durable white paper, rubber stamp ink pads were used for smearing each finger, imprints were taken, and each pattern of fingerprint was observed by powerful hand lens and recorded. Note was made of the sex, age, and ABO and Rh blood group for studying the relationship between types of fingerprints and relation to ABO and Rh blood type. Fingerprint was taken using the INK method as illustrated by Cummins and Mildo. Fingerprint patterns (loops, whorls, and arches) and blood data were collected.

Results:

In this study, 38% of subjects belonged to O blood group followed by A, B, and AB, and 96.77% of subjects were Rh-positive and 3.23% were Rh-negative.

Conclusions:




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Oral Health–Related Quality of Life and Dental Caries Status in Children With Orofacial Cleft: An Indian Outlook

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Abstract

Aim:

To assess the dental caries status and oral health–related quality of life (OHRQOL) among children with orofacial cleft reporting to a hospital in India.

Materials and Methods:

Subjects were divided into two groups. Group 1 cleft children ($n = 80$) and group 2 noncleft children ($n = 80$). Decayed, missing, and filled teeth (DMFT) Index, deft Index, and Children Oral Health Impact Profile questionnaire were recorded.

Results:

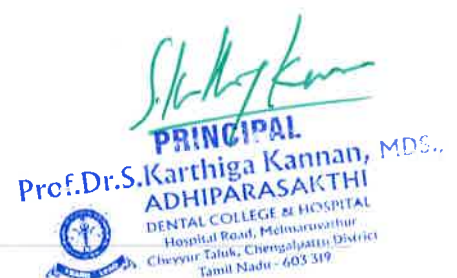
The mean DMFT was high in noncleft (3.51 ± 2.45) children than in cleft children (2.75 ± 2.68). The mean deft was high in noncleft (1.11 ± 0.96) children than in cleft children (0.86 ± 3.07).

Conclusion:

Cleft children have negative impact on OHRQOL than noncleft children.

KEYWORDS: Cleft lip, craniofacial, OHIP, OHRQOL, orofacial clefts

INTRODUCTION





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Oral Health–Related Quality of Life and Dental Caries Status in Children With Orofacial Cleft: An Indian Outlook

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KEYWORDS: Cleft lip, craniofacial, OHIP, OHRQOL, orofacial clefts

INTRODUCTION



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Rhytidectomy approach for management of Subcondylar fractures of Mandible

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Department of Oral and Maxillofacial Surgery, Tamil Nadu Government Dental College and Hospital, Chennai, Tamil Nadu, India.

ABSTRACT

BACKGROUND:

Fractures of the mandibular condyle are common and account for 25% to 50% of all mandibular fractures. There are various approaches available for open reduction and internal fixation of condylar fractures of mandible. This study was done to evaluate the efficacy of Rhytidectomy approach for open reduction and internal fixation of subcondylar fractures of the mandible.

MATERIALS AND METHODS:

A total of 20 patients (16 males and 4 females) in the age group of 20 to 40 years were included in the study. All patients had unilateral subcondylar fractures with or without associated fractures of mandible. Patients were selected according to inclusion and exclusion criteria. Radiographic examination using CT scan was done pre and post operatively. All patients were treated with General anesthesia using Rhytidectomy or facelift approach for open reduction and internal fixation of unilateral subcondylar fractures of mandible.

RESULTS AND CONCLUSIONS:

Average mouth opening preoperatively was 23.2 ± 2.6 mm and was increased to 36.2 ± 2.8 mm post operatively. All cases had occlusal derangements pre operatively which got resolved excellently due to very good anatomic reduction. Surgical access was excellent and scar was inconspicuous in all patients. Post operatively, TMJ pain was found in two patients, and clicking sound and deviation was present in two patients. Salivary fistula was seen in three patients. Transient facial nerve weakness was noticed in three patients and auricular anesthesia observed in two patients.

KEY WORDS: Rhytidectomy, Subcondylar fracture, ORIF

INTRODUCTION

Facial injuries are increasingly common in modern society due to technologic development of faster automobiles, increased hostility among drivers and rise in violence. The

Temporomandibular joint is not exempted from injury but its anatomic complexity makes it challenging. There are very few areas of Oral and Maxillofacial Surgery that have generated as much controversy as the management of condylar fractures. Fractures of the mandibular condyle are common and account for 25% to 50% of all mandibular fractures. An ideal mode of treatment for condylar fracture should enable the TMJ to function normally and it should also prevent shortening of ramus, facial asymmetry and TMJ arthrosis. Currently there are three schools of thoughts available for treating condylar fracture- functional, conservative and surgical. Surgeons who prefer closed treatment claim that equally good results were produced with reduced overall morbidity and lack of surgical complications.¹ Clinical outcome of conservative treatment can be sub optimal as the severity of the condylar fracture is often underestimated.

Advocates of conservative treatment consider the risk and morbidity of the surgical procedure is high to justify the surgical procedure. According to them the application of intermaxillary fixation for approximately three weeks and mouth opening exercise afterwards results in reasonable good results. (Konstantinović VS, Dimitrijević B, 1992², Takenoshita Y et al, 1990³). There is evidence of functional disharmony and compromised results in a significant percentage of adult patients treated by closed reduction (Lindahl L, 1977⁴). Though conservative management has remained as the main stay in condylar fracture management, the development of recent techniques and armamentarium has made open reduction a better method of treatment.

There are various approaches available for open reduction and internal fixation of condylar fractures of mandible. Extraorally, Preauricular, Submandibular, Retromandibular approaches are most commonly used for bone plating. The various other approaches to the mandibular condyle are intraoral approach, trans masseteric antero parotid approach, trans parotid trans cutaneous approach and endoscopy assisted open reduction and internal fixation of subcondylar fractures.



Patient Satisfaction Index Undergoing Orthodontic Treatment In Dental Hospital Based Institution Across Chennai: A Questionnaire Study

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ABSTRACT

Background: The aim of the present study was identifying patient and treatment factors associated with patient satisfaction in a group of adolescent patients.

Materials and method: A questionnaire study was carried out among outpatients attending the dental hospital-based institutions across Chennai during 2019-2020 to 200 subjects undergoing orthodontic treatment.

Result: Overall data shows that 53% of patient were satisfied with the orthodontic treatment and 47% of patient were not satisfied with the orthodontic treatment.

Conclusion: This study shows that the satisfaction of patients with orthodontic treatment has significantly increased in the present days. No correlation was found between gender and patient satisfaction.

Keywords: Patient satisfaction index, orthodontic treatment, dental hospital.

INTRODUCTION

Malocclusion is one of the most important dental condition which may negatively impact the individuals self-esteem and their emotional status apart from affecting the dental functions and the facial aesthetics.^(1,2,3) Several studies in the literature can be found regarding the impact of orthodontic treatment in the speech, appearance, social and inter personal relationship thereby improving the quality of the life of the individuals.^(4,5,6) Many factors such as quality of care, competence of the dentist, relationship between orthodontic treatment provider and patients, accessibility and convenience, and the cost of treatment determine patient's satisfaction ⁽⁷⁾.

Many studies state that orthodontic treatment improves the smile aesthetics of the patient that has an influence on patient's confidence and social interaction ⁽⁸⁾. The aim of the present study was identifying patient and treatment factors associated with patient satisfaction in a group of adolescent patients.

MATERIALS AND METHODS

In order to assess the patient's satisfaction index, a questionnaire study was carried out among outpatients attending the dental hospital-based institutions across Chennai during 2019-2020. Inclusion criteria included patients with Angles


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Case Report

Lateral Pedicle and Connective Tissue Graft – A combined approach for management of isolated gingival recession

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Abstract

Gingival recession is defined as apical migration of the gingival epithelium leading to the exposure of root surface. There are many surgical procedures for treating gingival recessions and the main goal is to cover the exposed tooth surface by soft tissue augmentation. The surgical techniques performed for root coverage has their own advantages and limitations. The surgical technique used for managing the gingival recession is the major factor that determines the outcome and the long term result of the procedure. The most common surgical technique in treating the isolated gingival recession is the lateral pedicle graft and the surgical technique with highest percentage of root coverage is the connective tissue graft. This case report deals with the management of an isolated gingival recession with lateral pedicle and connective tissue graft. The outcome of the procedure was excellent having complete root coverage.

Introduction

The apical migration of the gingival epithelium leading to the exposure of the root surface is termed as Gingival Recession. The gingival recession has various etiological factors and the treatment of gingival recession should eliminate the etiological factors followed by achieving the root coverage. Gingival recession may lead to plaque and calculus accumulation, loss of aesthetics, root caries, abrasion of the root surfaces and hypersensitivity. There are many surgical procedures which has been used in management of gingival recessions and technique has their own advantages and limitations. Grupe and Warren described the Lateral Sliding Flap [1]. Presence of adequate amount of soft tissue and the underlying bone at the donor site makes the prognosis of lateral sliding flap good. The major disadvantage of the lateral sliding flap is the formation of gingival defects on the donor tooth. Sullivan and Atkins described the possibility

of attaining root coverage by using free grafts at the site of gingival recessions [2,3]. They described that placement of the graft over the recession site causes some amount of "Bridging" because the survival of a portion of a graft is enhanced by the circulation from the vascular bed of the recipient site. In addition to Bridging, Creeping attachment by the coronal migration of the gingival epithelium occurs. The narrowness of the defects and the presence of interdental bone coronal to the buccal bone favours the coronal migration of the free gingival margin. Langer and Langer reported increase of 2 to 6mm of root coverage by placement of sub-epithelial connective tissue graft. It comprised of free connective tissue graft placed underneath a split thickness flap without making any attempt to completely cover the exposed connective tissue. This case report highlights the management of a isolated gingival recession using lateral pedicle and connective tissue graft. The post operative results were good achieving 100 percent root coverage without any post operative complications.

More Information

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Keywords: Gingival recession; Connective tissue graft; Lateral pedicle flap

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CASE REPORT

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A single-visit feeding plate for a 14-day-old neonate with cleft palate

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Abstract

Cleft palate is the most common congenital maxillofacial defect, compared to clefts of other facial structures. A feeding plate is a prosthetic aid designed to obturate the cleft so that the infant can generate negative pressure within the oral cavity, which is necessary for sucking. A 14-day-old infant, with no contributory medical and family history, was referred to the department of prosthodontics. The mother reported that the infant was not able to suckle milk properly even with the use of typical cleft nipples or squeezable bottles. The final impression was made with very high-viscosity condensation silicone rubber base impression material. The secondary impression was poured with dental stone to obtain a master cast, blocking out the undercuts with pink wax, and then, the plate was fabricated using self-cured acrylic resin. The feeding plate was checked in the dental clinic, and the patient's mother was asked to feed the baby. Instructions were provided on how to use, clean, function, and maintain the feeding appliance. The feeding plate was delivered on the same day considering high anxiety of the mother regarding the diminished weight of her infant relative to his age.

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Available from: <https://www.ijmdent.com/text.asp?2019/9/1/64/268993>

Full Text

Introduction

Cleft palate is the most common congenital maxillofacial defect and occasionally cleft of other facial structures. Cleft pathogenesis[1] occurs early during embryonic development and results from the failure of fusion of various facial processes. Hence, a multidisciplinary approach is needed in the treatment of infants with the cleft. Repair of the cleft palate is delayed until 12 months to 2 years of age.[2],[3] During this period, maintenance of adequate nutrition is essential to allow the proper growth

